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LETTERS

ON THE

INTERNAL IMPROVEMENTS

AND

COMMERCE OF THE WEST.

BY H. A. S. DEARBORN.

BOSTON:
PRINTED BY HARRIS F. LEWIS.
1834.

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BOSTON, DECEMBER 6, 1838.

To the Editor of the Boston Courier :

I place at your disposal a letter from Gen. Dearborn, who is temporarily residing at Buffalo in charge of important business of the Commonwealth. The letter is apparently the first of a series, containing information in regard to the productions, commerce, &c. of the West, which I have supposed might be interesting to your readers ; especially as the subject has an important bearing upon the future usefulness of our Western Rail-Road.

Yours,

JOHN P. BIGELOW.

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LETTER NO. I.

BUFFALO, NOV. 22, 1838.

To the Secretary of the State of Massachusetts:

DEAR SIR,—Such are now the facilities of intercommunication, by the means of steam-boats, rail-roads, and canals, that, in four days and a half, from the time of leaving Boston, I was standing on the banks of Niagara river and looking down into the profound gulf of its stupendous cataract; and had I not been detained twelve hours in New-York, in consequence of there not being a morning boat to Albany, and nearly as many more in Rochester, I should have performed the whole journey to this place, of 770 miles, in four days, without being deprived of an hour's sleep, and in the most pleasant and interesting manner.

It is impossible for persons residing in the older portions of the United States, to form an adequate conception of the great progress which has been made, and the giant strides with which our country is advancing, in population and all the arts of civilization,—of the wonderful physical and moral changes, which have been effected, within the last thirty years, throughout the whole extent of the Republic, without passing through the western parts of New-York and Pennsylvania, and the new states and territories which have been formed in the broad Valley of the Mississippi, since the close of the Revolution.

As late as 1792, there was not a white family residing in this state, west of Utica, and that immense fertile tract of land, from the bounds of Pennsylvania on the south, and the shores of Lake Ontario on the north, to the Niagara river and Lake Erie, was

a wilderness,—the hunting-grounds of those once powerful and warlike tribes of Indians, which formed that very remarkable and celebrated confederation, called the Six Nations. James and William Wadsworth of Connecticut were the first pioneers, who had the enterprise and fortitude to penetrate the unexplored forest, and commenced a settlement on the right bank of Genessee river, within the limits of the present beautiful village of Genesee, where the former gentleman resides, as the enlightened, hospitable, and honored patriarch of western New-York. His brother, who was eminent for his industry, perseverance, and patriotic efforts, to advance the best interests of those zealous and fearless fellow-citizens, who, with him, had staked their lives and fortunes in the same arduous yet commendable career, died a few years since, leaving to posterity a name and a character, which is more worthy of admiration, and better entitled to the respect and gratitude of succeeding generations, than those of the Grecian Argonauts. He went forth, as the herald of civilization, and boldly adventured into the depths of the primeval wilderness, to reclaim a new dominion for agriculture, enlarge the sphere of human industry, and advance the happiness and prosperity of millions. He was not ambitious of that distinction, which is derived from a merely hazardous expedition, or encouraged by the buoyant hope of returning triumphant to his native land, from a far distant clime, enriched with the golden spoils of conquest, or the treasures of commercial speculation, on the barbarous coast of another Colchis; but, with a lofty spirit of virtuous emulation, and that unostentatious yet indomitable perseverance, which no obstacles can impede, he sought to be the benefactor of his country, and those hardy compatriots, who followed in the path he had opened; and the glorious reward, for all his perils and hardships, is the imperishable homage of public gratitude.

It was not until after seven years, from the time those two meritorious sons of New-England reared their log hut, on the luxuriant banks of the Genessee,* that the tide of emigration reached the shores of Seneca Lake, and twelve had elapsed, before it flowed into the vale of that beautiful river; but then it

* Genessee is the Indian name for Pleasant Valley.

soon rushed, with accumulating energy, to the frontier of the state.

In the year 1813, I passed through Rochester and this place, when the only structures, at the former, were a small saw-mill, one log and some two or three framed houses. Now it is a flourishing city, containing more than eighteen thousand inhabitants. Genesee river divides the city, and being precipitated two hundred and sixty feet, over rapids and falls, within its limits, furnishes a hydraulic power of pre-eminent grandeur, which is the chief cause of the foundation and present flourishing condition of Rochester. These falls have been carefully gauged, by experienced civil engineers, and found to be equal to two thousand steam-engines, of twenty horse power. There are now, within the bounds of the city, twenty flour-mills, containing ninety runs of stones, and are capable, when in full operation, of manufacturing five thousand barrels of flour daily, requiring a supply of twenty thousand bushels of wheat. The annual product of flour, in fertile seasons, has been estimated at 600,000 barrels. There are also many saw-mills, and manufactories of carpets, woollen cloths, fire-arms, and numerous other articles.

The Erie Canal passes through the centre of the city, at right angles to the course of the river, thereby affording a direct and cheap mode of transportation to the lakes and Hudson river, while the mouth of the Genesee has been converted into a large and commodious harbor, by the construction of two piers, each of which extends into Lake Ontario nearly 2700 feet. This highly important work, so creditable to that enlarged and liberal policy of the National Government, which is rendering such great and indispensable facilities and security to the navigation of the lakes, will, when completed in solid masonry, require an expenditure of about \$300,000. Similar artificial labors have been successfully commenced, and are nearly finished, in Sodus Bay and at the entrance of Oswego river. The safe and spacious port of Rochester admits the largest steam-boats, and other vessels which navigate Ontario, and is connected with the city by a rail-road of only two miles in length; and a canal is being made up the valley of Genesee river, to connect the Erie Canal with the Alleghany river at Olean, thus opening the whole trade of

that rich wheat-growing region with Rochester, and making a line of water transportation to Pittsburg, on the Ohio.

Lockport has been created since the Erie Canal was opened, and contains a population of between seven and eight thousand. It is situated at the eastern extremity of the deep-cut, through the elevated ridge, which was, at some distant period, the shore of Lake Ontario; and the great descent of the locks produces a water power of such vast capacity, as renders that admirable site for a town, one of the most valuable and inviting, for mills and factories, after Rochester, between the Niagara and Hudson rivers, on the line of the Erie Canal.

Buffalo, when visited at the period above mentioned, was but a small village, consisting of some twenty or thirty dwelling-houses, all of which, save two, were destroyed by the British, the following winter; and the only means of reaching Fort Schlossar, the landing-place just above the rapids of Niagara Falls, was by an Indian path, which had been barely sufficiently cleared out and improved to admit the difficult passage of an ox-team, or a batteau, in which I was obliged to descend the river, from the mouth of Buffalo creek, the present harbor, to the Schlossar landing. Now there is a rail-road, with locomotives, the Erie Canal for half the distance, and a steam-boat which makes two trips a day, besides an excellent county road. The only vessel of the United States, on Lake Erie, before the gallant Commodore Perry commenced the equipment of his victorious fleet, was one small armed schooner; and so great has since become the demands of transportation, that, during the past summer, it has been navigated by five hundred large ships, brigs and schooners, besides sixty magnificent steam-boats. Such is the accumulation of goods, which have reached this place, for the autumnal supply of the upper country, that nine steam-boats left the harbor this morning, laden as deep as they could swim, with freight and passengers; and, as two were coming down the lake, there were eleven seen under way at the same moment. There were, besides, eight laying at the wharves, loading and unloading, and between forty and fifty square-rigged vessels and schooners. The warehouses are still filled with merchandize, and the canal being yet navigable, it is feared there will not be the means

of transportation to despatch the whole that may be received, before the harbors of the lakes are frozen up.

Thus, in the short period of twenty-five years, a city has arisen on the ruins of the conflagrated village, which contains more than twenty thousand inhabitants, with a greater number of elegant stone and brick houses, stores, churches, and other public edifices, in proportion to its size, than any other in the Union. But the chief increase of the city has been since the completion of the Erie Canal, which was not until November, 1824; and it has all the appearance of that thrifty growth, which announces, in the most clear and decisive manner, the future grandeur of this truly Tyrian creation. In less than twenty-five years, it will inevitably number one hundred thousand, of the most industrious, enterprizing people, who ever gave consequence and added to the power and glory of a nation. This may appear extravagant; but, nevertheless, the reality will outstrip the prediction, if the exact data, furnished by the *past* and the *present*, are to be considered as sufficiently veracious, on which to estimate, with an approximating accuracy, the results which are to be developed in the *future*; and more especially, since the successful substitution of steam, for animal power, on the land, and that of the winds, on the ocean. The triumphant experiments in rail-roads, and the navigation of the Atlantic by steam-ships, with the infinite facilities afforded by canals, of unprecedented extent and capacity, have given such a tremendous impulse to industry and intelligence, as was never before experienced or contemplated; and the prospective consequences are so immeasurably beyond whatever has been achieved by genius, science, art, wealth, and national power combined, that no mind can grasp, and no prescience indicate them. We are witnessing the most sublime spectacle that ever attracted the wonderful gaze of philosophy. A movement of civilization, which is as startling and momentous as one of those earthquake convulsions, which changed the entire geology of the earth.

There is not so commanding a position in the United States as this, for forming a clear and just conception of the grand and interesting features of the physical geography and moral energies of the nation,—the gigantic strides of emigration, the rapidly expanding bounds of all branches of industry, the vast natural

means of intercommunication by lakes and rivers, and the inestimable advantages which are to be derived from an enlarged and liberal system of internal improvements. This city may be considered as the focal point of re-union for the innumerable adventurers, who, from Maine, New-Hampshire, Vermont, Massachusetts, Rhode-Island, Connecticut, New-York and Europe, are destined for Ohio, Michigan, Illinois, Wisconsin, Iowa, and the still farther West. Here they embark in steam-boats, ships, and other vessels, for the various lake ports which are nearest the places of their several intended establishments. It is the short and narrow defile through which all the products of the mines, forests, agriculture, and the numerous other branches of industry, of the immense western region, must pass down, to the markets on the Atlantic, and those of the whole globe up, to supply the wants, comforts and luxuries of that thronging multitude, which, like an irreffluent flood, is sweeping over the whole surface of those fertile and flourishing states and territories.

It is a position which will command a greater concentration of commerce and business of every kind, than any other in the interior of our capacious country; for, besides the conspicuous advantages which I have enumerated, a water power has been created, by the construction of the sea-wall from Black Rock to the entrance of Lake Erie, which is not only greater than any other in the Union, but equal, at least, to the whole of those in the New-England States; as it embraces nearly a quarter of the volume of the entire current which rushes over the Falls of Niagara, and is as perpetual and inexhaustable as the four inland seas, which are its sources of supply. Mills and factories may, therefore, be extended upon the lateral wall, and below the dam, to the entrance of the Erie Canal, in the village of Tonnawanda, without producing any perceptable diminution in the prism of water.

Your friend and servant,

H. A. S. DEARBORN.

LETTER NO. II.

BUFFALO, Nov. 28, 1838.

To the Secretary of the State of Massachusetts:

DEAR SIR,—From the two powerful causes, which were stated in a former letter, Buffalo will increase in population in a manner unprecedented in the history of any of the very remarkable towns which have risen into consequence, either before or since the war of the revolution; and with the commanding situations of Black Rock and Tonnawanda, the entire area of land between the northern bounds of the latter to the shores of Lake Erie, and an indefinite eastern line, will become a continued settlement, which must ultimately be united into one city, and the sooner that is done the better it will be for each, when they will inevitably become an immense emporium, which can only be surpassed in grandeur and affluence by but a very few others, on some of the most favored harbors and estuaries of the maritime frontier.

When the ship canal, from Chicago to the foot of the rapids of the Illinois river, is completed, cotton can be brought to this place from the states of Mississippi and Louisiana by steam-boats, at as little expense as by coasters and land transportation, to the manufacturing towns of New-England, while wool is now a staple product of a large portion of this State of Ohio. What a field for manufacturing enterprize will then be offered; by the hydraulic power which has been described; not only for the supply of the western region, with cotton and woollen fabrics, but every other article which is now made in the North-eastern States; and especially those composed of iron; for the inexhaustible mines of that metal, and of bituminous coal, are being opened and

wrought in the State of Ohio, and can be delivered here, at prices which must inevitably cause numerous works, for the construction of steam-engines and various other articles of that invaluable material, which will be required to meet the increasing demand of the lake country.

The coal, with which this city is now supplied, is brought from a mine near Cleveland, on the Ohio Canal, and is superior, as fuel, to any of the varieties imported from England. It is so combustible as to ignite with greater facility, and presents a clear and vivid blaze, without as much smoke as either the Orrel, Newcastle, or Cannel; and when the bituminous portion has been evolved, the remainder of the mass is so completely carbonic, that the appearance of the fire, is that, of one produced from the best charcoal; and the whole is so completely consumed, as to leave only a comparatively small portion of white ashes, such as are the residuum of rock maple or hickory wood, without any scoria or cinders. The price, the past summer, has been six dollars per chaldron.

Another mine has been opened, and some vessel loads brought here, for trial, which is considered, by eminent geologists, as a still more perfect variety of the bituminous species of coal, and superior to any hitherto found in any country. I have only seen samples of it, but have not yet had an opportunity of witnessing its being used as fuel. It is found in an isolated mountain, in Broomfield, Trumbull County, Ohio, about fifty miles from Erie in Pennsylvania. A canal is in progress from the port of Erie to Pittsburg, which passes on one side of the base of the mountain, in which the coal is deposited, in a vein five feet thick; and a rail-road will be commenced next year, from Coneaut, on Lake Erie, thirty miles westward of the town of Erie, to Beaver, on the Ohio river, thirty miles below Pittsburg, which will pass on the opposite side of the mountain,—by both of which lines of transportation, the coal can be brought to the shore of the lake, and thence in vessels to the city, where it will be sold for not more than five dollars per ton. There is an abundance of iron ore in the immediate vicinity of this coal deposite, and the latter approximates so nearly to perfect charcoal, that it can be used in the manufacture of iron, even without being coked.

But flour mills will precede manufactories on the Niagara,

from the facilities which the location presents for such structures. Large vessels can either pass down the basin formed by the Black Rock sea-wall, or the main channel of the river, and unlade their cargoes of wheat directly into the mills, and when converted into flour, the barrels containing it may be rolled into the canal-boats, for transportation to the Hudson. One mill, of pre-eminent excellence, containing seven runs of stones, has been built by Kingman & Durfee, within two years, which grind fifteen hundred bushels of wheat, and turn out three hundred barrels of flour daily; and is capable, if worked twenty hours out of each twenty-four, of manufacturing four hundred barrels.

Some estimate may be formed of the number of mills which will be required, from the fact, that over 2,000,000 bushels of wheat were sent down the lake from Illinois, Michigan, and Ohio, the past season, for the mills in this vicinity, and along the route of the Erie Canal, as well as for the Albany and New-York markets. The same intelligent and meritorious young gentlemen have commenced a still larger mill on the Black Rock dam, having cleared, the first year, the cost of the first, although amounting to over fifty thousand dollars.

The steam saw-mill at White-Haven, on Grand Island, directly opposite the mouth of Tonnawanda Creek, and the town of that name, is unequaled in this country. It contains six gangs, each composed of nine saws, which are chiefly employed in cutting white oak plank, for ship-building. The island contains about 15,000 acres, being nine miles long and nearly as broad in its greatest width, and is covered with a superb growth of trees, chiefly white oak, and of a prodigious size. I saw logs at the mill four feet in diameter at the butt, and seventy feet in length, as straight and symmetrical as an architectural column. I was informed that trunks five feet in diameter and seventy-five feet in length have been sawed. The plank are sent down the Erie Canal to Albany, and from thence, coastwise, to the several navy and mercantile ship-yards on the sea coast. They are the best in material, and beauty of surface, and uniformity of thickness, which have ever been used, and command the highest price. A sufficient number can be sawed weekly for planking up two ships, of five hundred tons each. Besides the timber obtained from Grand Island, large quantities are received from the Canada

shore of Lake Erie, and the white pine logs, for boards, which come from the banks of Chippewa river, are remarkable for their immense size and superior quality.

The land of Grand Island is excellent,—equal to any in the State—and, as the timber is removed, will be converted into farms of great value. Between it and the main land is the island of Tonnawanda, of about a hundred acres, owned by Mr. White of your city, and on which he is erecting a cottage. It is impossible to conceive of a more beautiful spot for a summer residence. It is covered with all the variety of trees and shrubs peculiar to this part of our country, save some twenty acres, which have been cleared and cultivated.

White-Haven will be the site of the great ship-yard for constructing the numerous steam-boats and other vessels, which will be required for these waters.

There must be a large town at the mouth of the Tonnawanda Creek, as Grand and Tonnawanda Islands form a deep and capacious harbor, where the largest ships, that navigate the lakes, may be laden and discharged, in perfect security against the storms, which frequently render the other ports dangerous to the commercial fleets which seek them for shelter. Besides, it is the basin and grand entrepot of the Erie Canal; for there, is properly its western terminus; and the period is not distant, when a ship canal will be commenced at that point, and, following the valley of the Creek, pass on to Lockport, and from thence down Eighteen Mile Creek, to Lake Ontario; the distance being only about thirty miles, and the route much preferable to that which has been projected from near Fort Schlossar to Lewiston. The lockage will be less difficult, and the work will not be exposed to injury from batteries on the opposite shore, in the event of a war, in which Canada may become a hostile country.

A town has been laid out at Niagara Falls, and a number of elegant houses, stores and hotels, have been erected. Gen. Peter B. Porter has just commenced a magnificent stone mansion, and there is all the appearance of a thrifty settlement. There are several mills and factories on a canal, which is supplied with water from the rapids; but another, on a much larger scale, is to be excavated, which will afford an ample water

power, for any number of establishments, in either of those branches of business.

Of the Falls of Niagara! those mighty cataracts? I say nothing. Like the ocean in a tempest, and the Alps,—they must be *seen* to be appreciated, for they cannot be *described*.

The necessity of a larger and more safe harbor, is begun to be experienced at Buffalo; in fact, the present one is, even now, barely sufficient for the innumerable canal boats, and when they shall be triple their present size, which will be the case as soon as the Erie Canal shall have been enlarged, in the manner which has been commenced, the daily number usually in port cannot be accommodated. Fortunately, there is no difficulty in so enlarging the harbor as will be fully commensurate with the demands of the future navigation of the city. Nearly opposite the extremity of the pier, which has been extended into the lake, from the peninsula, which forms the left bank of the entrance of the Buffalo Creek, is a reef, which extends to the breakwater, where the sea-wall ends, that has been named, as forming the basin and hydraulic power of Black Rock. On that reef a breakwater can be easily erected, which will form a harbor, secure against all winds, with an area of at least five hundred acres. From the mouth of the present harbor, a sea-wall must be constructed, down to the entrance of the Niagara river, in sufficient depth of water to allow the largest vessels to lie afloat; and the space between it and the shore filled up, so as to form a spacious quay, or landing place, and the whole of the ground leveled to the southern margin of the canal, and intersected by several crosscuts from the latter, into the harbor. On the quay and borders of the short canals, as well as those of the main trunk, should be broad paved streets, which will afford excellent sites for stores and warehouses, and where the chief commercial business of the city will be transacted. The General Government should construct the breakwater; but if it does not, individual enterprise will accomplish that indispensable work. At its upper end should be formed a massive granite pedestal, and surmounted by a colossal bronze statue of the illustrious DE WITT CLINTON, a hundred feet high,—holding aloft in one hand, a flambeau, as a beacon light, to designate, in the night, the entrance, and pointing with the other, in the direction of the

route of the Erie Canal. New-York owes such a monument to its greatest **BENEFACTOR**, in grateful remembrance of the pre-eminent services he rendered the State; ay,—the whole republic; for the direct and glorious influence of his patriotic labors have been felt in every city, town, village and dwelling, throughout the West and the East, from the St. Croix to the extremity of Florida.

From the peculiarly favorable topographical features of that portion of the city, laying west of Main-street, its future extension will first be towards the new harbor of the Niagara river. But all the area within the existing limits will ultimately embrace but a small portion of the dense population, which must be assembled in the modern Byzantium, that will majestically crown the banks of this American Bosphorus, and become the grand entrepot, between the vast Euxines of the West and the Atlantic Ocean. Here must be concentrated the products of every clime, destined for the supply, and in exchange for those of a large portion of the millions of inhabitants, who will occupy the immense territory* which extends westward to the Rocky Mountains, between the Ohio on the south, and the highlands in the west and north-west, which are the fountains of all the waters that flow into lakes Erie, Huron, Michigan and Superior, and the deep and lengthened channels of the Missouri and Mississippi, above the confluence of the Ohio, with the latter majestic river.

Your friend and servant,

H. A. S. DEARBORN.

LETTER NO. III.

BUFFALO, Nov. 22, 1838.

To the Secretary of the State of Massachusetts :

DEAR SIR,—From the very remarkable physical features of our country, the Straits of Niagara, afford the only practicable point, within the bounds of the United States, for forming a water communication, between the Atlantic and the four great lakes. The extensive range of the Alleghany Mountains, which commences but a little distance south-east of Buffalo, and stretches into Georgia and Alabama, imposes an insuperable barrier, to a rival outlet, for the trade of the NORTH-WEST. Fortunately for New-York, the tremendous convulsion, which uphove those Northern Andes, did not extend farther than the latitude of the Falls of Nunda, on the Genessee river, and the level gorge, thus presented, has enabled the intelligent government of this State, to turn their northern flank, where the route for a canal is opened, to the tide-waters of the Hudson, without encountering but an inconsiderable elevation, above the level of those of Lake Erie, and which can be made to flow into that river, with a descending lockage of only five hundred and seventy feet ; and that, too, in a distance of three hundred and sixty miles. At no other place, in the entire range of over five hundred miles, until past the southern extremity of the mountains, can a canal or rail-road be formed, into the immense basin of the lakes, or the valley of the Mississippi, from the sea coast, that must not cross a summit level, of at least a thousand feet in height, requiring an ascend-

ing and descending lockage, more than quadruple that of the CLINTON CANAL.

This natural geographical advantage, has been, and must for ever continue to be, the grand cause of the prosperity and illimitable expansion of Buffalo, Black Rock, and Tonnawanda. If a more spring of water, and a grove of a few trees, in the midst of the arid desert, which lies between the Euphrates and the Mediterranean, induced Solomon, to there establish his "Tadmor in the wilderness," for the accommodation of the numerous caravans, which, for centuries, carried on the trade of Palestine, Greece, and the Roman empire, with Persia and India,—if an advantage, so comparatively insignificant, was the sole cause of the rise of the magnificent and once powerful city of Palmyra,—and if the commerce of the Israelites, with the Red Sea, induced the navigators and princely merchants of Tyre, to create the emporium of Ezion Geber, and enabled the Edomites to execute those splendid temples, theatres, and mausoleums, in the solid rocks, which encircled the still wonderful yet dilapidated and long-lost capital of Petra, what must be the consequences of a position, so pre-eminently superior, and where there is a combination of impulsive powers, which are in perpetual and accumulating action?

The very remarkable and propitious influence, which the construction of the Erie Canal has had upon the city and State of New-York, has been equally experienced, in all the other states and territories bordering upon those five great lakes, which are the perennial urns of the St. Lawrence. The opening of that artificial Nile, gave a sudden and mighty impetus to enterprize and industry, throughout that whole region; and it has been constantly augmenting in energy, from the co-operating measures, that have been successfully adopted, by the respective legislatures of each of its political divisions, to render the advantages, derived by those, who, from their favorable positions on navigable waters, were immediately enabled to participate in them, common to a still more extensive portion of the population, which actually did, or speedily must exist, not only within their several limits, but far, far beyond.

Such have been the direct advantages which have resulted from the first grand experiment, which was made to test the

utility of internal improvements; but the indirect moral consequences have been equally astonishing and momentous. The states of Pennsylvania and Maryland, and afterwards Virginia, the Carolinas and Georgia, were roused to a just sense of their altered conditions, and perceived, that unless they imitated the enlightened policy of the CATARACT STATE, the business of their maritime cities with the interior, would rapidly diminish and ultimately be lost, while the products of agriculture, would be either excluded from the Atlantic markets, or the farmers and planters be barely able to subsist, by a competition, which must be so unequally prosecuted, as long as the great difference of the expense of land and water transportation continued. Then, there were the rich mines of coal and iron, which were laying useless in the mountains, and would be forever valueless, until, by canals and rail-roads, they were rendered inexhaustible sources of individual and public wealth.

From these considerations, a spirit was roused, which soon put into vigorous action all the resources and energies of those states, for the important purposes of internal improvement; and lines of communication were opened, to an extent, which included an expenditure of over twenty millions, in Pennsylvania alone.

Examples as well as interest have had their joint influence, in Ohio, Indiana, Illinois, Michigan, Kentucky, and several of the south-western states,—and, at last, in portions of New-England; and public works of all kinds, for the advancement of the best interests of the people, are in progress, which no one would have anticipated thirty years since, would have been undertaken for a century and a half from that period.

It is interesting to look back to the time, when the first great movement was made in England, for the construction of better means of transportation, than were offered by common roads, and mark the slow, but gradual influence of the Duke of Bridgewater's bold experiment, not only in that country, but this. As wild and extravagant as was his undertaking considered, the effect was felt, even here, for Franklin was desired, by a gentleman of Philadelphia, to send him all the reports and such other information, as could be collected, in relation to that work, and

stated as a reason for so singular a requisition, for that period, "that the people were canal mad."*

Under the excitement thus produced, a canal was projected from that city to the Susquehanna, and a survey of the route actually commenced, under the direction of the illustrious Rittenhouse; but the difficulties which preceded the Revolution, becoming more intensely absorbing, the plan was abandoned, the mania died away, and was not again revived until after the lapse of nearly seventy years, when the work was earnestly begun and unremittedly prosecuted, to the Ohio river.

The next earliest suggestion, in relation to extensive lines of communication between the Atlantic ports and the western rivers and lakes, was made by Washington, soon after the close of the French war, which ended in 1763; and so great were his exertions, that a bill was obtained for rendering the Potomac navigable to Wills's Creek; but the contest for national independence paralyzed all such pacific measures [for the benefit of the colonies. Still the patriot soldier never forgot his favorite project; and, on receiving the news of the preliminaries of peace being signed, he left the American camp at Newburg, accompanied by Gov. George Clinton, to explore the interior of New-York; and from the following extract of a letter to the Marquis de Chastellux, it will be perceived how deeply he was impressed with the very remarkable geographical characteristics of the country; the peculiar facilities which were presented for the extension of trade, and how clearly the future purposes to which they would be rendered subservient, as well as the brilliant destinies of the far-off west, were revealed to his luminous and capacious mind. "I have lately made a tour through the lakes George and Champlain, as far as Crown Point; then returning to Schenectady, I proceeded up the Mohawk River to Fort Stanwix, crossed over to Wood Creek, which empties into Oneida Lake, and affords the water communication with Ontario. I then traversed the country, to the head of the eastern branch of the Susquehanna, and viewed Lake Otsego and the portage between that lake and the Mohawk River, at Canajoharie. Prompted by these actual observations, I could not help taking a

* See Franklin's Life and Correspondence, by Sparks.

more contemplative and extensive view of THE VAST INLAND NAVIGATION of these United States, and could not but be struck with the immense diffusion and importance of it, and with the goodness of that Providence, who has dealt his favors with so profuse a hand. WOULD TO GOD WE MAY HAVE WISDOM TO IMPROVE THEM! I shall not rest contented until I have explored the Western country, and traversed those lines which have given bounds to a new empire."*

In conformity to the intimation above given, Washington made a journey to Pittsburg, in 1784, over the route which he had pursued in the disastrous campaign of General Braddock, and on his return presented to the Governor of Virginia a full report of his views in relation to the importance of opening an intercourse with that region of country, and distinctly and forcibly recommended the immediate commencement of works for improving the navigation of the Potomac and James rivers, by locks and canals, past the most difficult portions of their channels, so as to render them navigable for boats, and establish a better communication with the Ohio river. After alluding to the natural desire of Pennsylvania and New-York, and the measures which each would inevitably adopt to secure the business of the West, he magnanimously remarks:—"I am not for discouraging the exertions of any State to draw the commerce of the Western country to its seaports. The more communications we open to it, the closer we bind that rising world to our interests, and the greater strength we acquire by it. Extend the inland navigation of the eastern waters—connect them, as near as possible, with those which run westward—open these to the Ohio—open also such as extend from the Ohio towards Lake Erie, and we shall not only draw the produce of the western settlers and the fur trade of the lakes also to our ports—thus adding an immense increase to our exports, and binding those people to us by a chain, which can never be broken."*

Thus all the great routes of the lakes and western waters, which have been completed, or are being opened, were distinctly pointed out by Washington as early as the close of the revolutionary war. Like Peter the Great, of Russia, his conceptions of the

* See Washington's Correspondence, by Sparks.

future magnitude and grandeur of the republic, and the importance of canals and other methods for developing its immense natural resources, were as vivid as they were enlarged and patriotic; and so confident was he then, of their ultimate construction, that the power and the means of that greatest of sovereigns were only required to have been at his command, to have insured their prompt completion.

Feeble demonstrations were made in several sections of the Union, to carry into effect that system of intercommunication which had been considered by the most enlightened men of Europe and this country, to be indispensable to the progress of the arts of civilization and the general prosperity, wealth, and power of nations. In the United States, as well as Great-Britain, notwithstanding the insurmountable objections of the accomplished engineer of the Bridgewater Canal, founded on scientific principles and the most conclusive practical illustrations, it was first attempted to render our rivers navigable, by clearing out the obstructions of shoals, reefs and bars, building dams and jetties, and locking round rapids and falls; in which futile endeavors to accomplish the desired object, large sums were expended on the James, Potomac, Susquehanna, Schuylkill, Hudson, Mohawk, Connecticut and Merrimack rivers, which only went to prove the truth of Brindley's remark before a committee of the House of Commons,—“That rivers, above the point of their natural sufficiently perfect channels for all the purposes of navigation, were only to be considered as feeders for canals.” The utter failure of nearly all these improvident labors, to meet the exigencies of the increasing interior transportation of the country, becoming, at last, apparent, more enlarged views of the subject began to be entertained; and especially after the able and instructive report which was made to Congress by the Hon. Albert Gallatin, during the administration of President Jefferson. Still, no decisive movement was made, on the part of the National or State governments, to execute any of the great works which had been so clearly and satisfactorily recommended to the consideration of the respective legislatures of each, as well as to the intelligence and interests of the people. The burthen of the public debt precluded the action of Congress, and numerous causes were combined, which prevented that of the States. The chief of

which, however, was founded on the erroneous assumption that such undertakings were to be considered merely as pecuniary speculations; and when a certain, immediate and ample interest for the money expended was not fully apparent, the subject claimed but little attention, and was summarily disposed of, without regard to the general benefit, which was to be derived by all the various branches of industry.

Your friend and servant,

H. A. S. DEARBORN.

LETTER NO. IV.

BUFFALO, NOV. 28, 1838.

To the Secretary of the State of Massachusetts:

DEAR SIR,—The only proper manner in which improved facilities of intercourse should be considered, is that in which the old and ordinary highways have been regarded. When the population was thinly scattered through a wilderness, a bridle-path, which the Indians had used, or a route designated by spotted trees, subserved all the purposes of the adventurous pioneers of agriculture; but as settlements increased, and villages appeared, the wants and comforts of the inhabitants proportionably multiplied, and the necessity of more perfect means of travel caused broader roads to be cleared; and with the progress of industry and affluence, it finally became indispensable that they should be passable for wheels as well as sleds, and be capable of use at all seasons of the year; their surfaces were, therefore, graded, bridges constructed, and their condition generally amended, in the ratio of the purposes for which they were required. During all this time, it never entered into the mind of a single individual, that a revenue was to be derived from the amount of money appropriated for such objects; but, so far from it, taxes were expressly levied on the several towns and counties for maintaining those common and important avenues, and penalties imposed for any neglect of their condition, which might endanger the lives or the property of the citizens, who had a right to pass over them freely.

At last, when other methods of rendering the intercourse between various sections of the country more certain, expeditious,

and economical, were found to be necessary, instead of considering a canal as only an infinitely superior kind of highway, and as indispensable to the augmented number and more advanced state of the population in the domestic, moral, social, industrious and commercial relations, as was the mere trail of the savage to the early emigrants into the forest, it was, by some inexplicable perversion of the long established principles and uniform customs of the country, looked upon as rather a new field for individual enterprise, where capital was to be invested on the expectation of gain,—as in navigation, commerce, or manufacturing establishments. The natural consequence of this erroneous aspect of the subject was, that all the preliminary inquiries and calculations were instituted to ascertain what income could be realized, rather than the more correct and important investigation, for establishing this simple fact;—*will the public good be subserved*, in proportion to the amount of the expenditure to be incurred. This having been established, the course was definite, and the duty of vigorous action as imperative, as the demand was just and urgent.

These strange and deleterious notions, which, unfortunately, too commonly prevailed in this country, were difficult of eradication. But such an inversion of the power to be applied, which, when requiring the mightiest, the least is sought, is an anomaly of the moderns, and of recent and limited occurrence. Among the ancients, and in continental Europe, the great works, which were required for the benefit of the whole people, were undertaken and executed at the expense of the nation. The canals of Babylon and Egypt, the artificial harbors of the Greeks and Carthaginians, the aqueducts and roads of the Romans, and similar structures in Italy, France, Holland and Russia, are the enduring monuments of their past or present power, affluence and intelligence. When some public structure or improvement was suggested, the question asked, by such men as Themistocles, Adrian, Hannibal, Sully, Calbert, Peter and Napoleon, was not, —*What will be the cost?* but others, more grave and pertinent; *Is it necessary, and can it be accomplished?*

Finally, however, reason has re-assumed her empire, and whatever is required to be done for the general weal, is considered as being within the peculiar province, and to belong exclu-

sively to the national or state authorities. This is not only proper, for the reasons which have been alleged, but to prevent monopolies that may become onerous to the people, as well as having a direct tendency to retard, rather than accelerate, the march of improvements. For when pecuniary advantage is the least object of consideration, and while the benefit of every citizen and the universal prosperity of the country are the grand results to be attained, the works themselves are the alternate cause and effect of that enterprise and industry, which rendered their establishment necessary, as well as being perpetual sources of accumulating means for their rapid extension and multiplication. Yet it required a reach of intellect, an unwearied perseverance and a moral firmness of no ordinary character, to induce the first great experiment in this country. So little was the subject of internal improvements and the science of civil engineering understood, so general the doubts as to the practicability and expediency of their being rendered available, and so strong and uncompromising the prejudices in favor of individual, rather than public expenditures, for such purposes, that it was many years, after the project of the Erie Canal had been presented, before it found sufficient favor to receive the sanction of a majority of the Legislature. Indeed, such was the indifference, or ignorance, which prevailed, that, when the independent, truth-seeking and intrepid Forman, as leader of the forlorn hope, in the House of Representatives of the State of New-York, offered a resolution in February, 1808,—“That a committee should be appointed to take into consideration the propriety of exploring, and causing a survey to be made for a *Canal between the tide, waters of the Hudson River and Lake Erie*,”—it is notorious, that “the proposition was received with such expressions of surprise and ridicule, as are due to a very wild and foolish project, and was only finally sanctioned, upon the ground that it *could do no harm, and might do some good* ;”^{*} and the trifling sum of six hundred dollars was all that could be procured for such a vast labor, and it was not until April, 1817, that a bill was passed, authorizing the commencement of the Erie and Champlain Canals.

^{*} Gordon.

Then, indeed, there was an action and a zeal, worthy of the momentous occasion and the age,—for a master spirit led on, and the abundant resources of the State were directed to the accomplishment of the noble work, in a manner unparalleled in the history of nations; and the whole line of the two canals, exceeding 430 miles in extent, was completed in eight years. But, at one period, so powerful was the opposition to the prosecution of the labor, that fears began to be entertained that it would be suspended, even when nearly half finished.

The practical results were so triumphantly beyond the favorable calculations of the most sanguine, that not a single man is now to be found who does not glory in this magnificent memorial to the meritorious and ever to be honored patriots, who fearlessly braved every difficulty, which was to be encountered, during the progress of the herculean undertaking.

The consequences to the nation, of this successful experiment, are beyond the grasp of the human intellect. It has established a new era in our destinies, and thrown an arch across the abyss of time, by which we have immediately attained a position, that otherwise could not have been reached until after the revolution of centuries.

The number and extent of the radiating and tributary channels which have been, or are being formed, since the gates of this Eastern Mississippi were thrown open to navigation, strikingly indicate the immense area of territory, in which it is found to be the most direct, commodious and cheap avenue for transmitting the multifarious and increasing articles of interchange, between the ocean and the interior. If the states and territories now embraced within the mighty sweep of that genial influence, which this national thoroughfare has so broadly diffused, looked silently on while the work was steadily advancing, amidst the doubts and fears of the many, as to that splendid result, which its few earliest champions had predicted, they instantly perceived the far-reaching advantages when it was consummated; and with that confidence and energy, which is inspired, when some new and astonishing, yet unverified truth or fact, has been confirmed by the most full, complete and incontrovertible illustration, at once and unhesitatingly entered the same useful and honorable career. Although their means were not so easily

obtained for prosecuting such laborious and expensive public works, as were afforded by the sufficient and readily convertible resources of New-York, they boldly created them, by a direct appeal to the intelligence of the people, who cheerfully acceded to the imposition of a tax, for that special purpose.

The aggregate length of the various canals for connecting the Ohio with Lake Erie, exceeds a thousand miles; and that in Illinois, which will open a direct channel from Lake Michigan to the Mississippi, is of such enlarged dimensions as to permit the passage of large vessels, being ten feet deep.

The lines of rail-road which are in progress, are fifteen hundred miles in extent. Large portions of all these works have been completed, and the whole of them will be, in a few years, involving an expenditure of \$48,000,000.

The territory included within the bounds of Ohio, Indiana, Illinois, Michigan and Wisconsin, contains 280,000 square miles, and is twice as large as the Kingdom of France, and six times as extensive as England. The population now amounts to about 3,000,000, and if it shall increase in the same ratio during the next twelve years, there will be more than 6,000,000 in 1850, which will furnish a tonnage, in exports and imports, of \$200,000,000. But should the ratio of increase be only that of the average of all the states, there will be 96,000,000 in a century from this time.

To form some near estimate of the increasing resources of the West, it is sufficient to state, that from an assessed value of the country beyond the Alleghany Mountains, in 1798, wealth has been created within the forty years that have since elapsed, to the amount of \$1,200,000,000.*

But the state of New-York has not halted in its majestic march of improvement; and while others have been emulous to imitate the first grand and decisive step, which was so successfully taken, its career has still been onwards, and the prospective route is lengthened and expanded beyond the ken of even those, who, from the advanced watchtowers of intelligence, have the most commanding prospect of that yet more glorious way, which looms in the receding distance.

* I am indebted for these statistical details to the very able report made to the Legislature of New-York, last winter, by the Hon. S. B. Ruggles.

Since the Champlain and Erie Canals were finished, others have been made from Syracuse to Oswego, situated at the confluence of the river of that name with Lake Ontario,—from Seneca and Cayuga Lakes to the Erie Canal, in Montezuma; which, including those lakes, and the Chemung canal, forms a line of navigation of about a hundred and forty miles;—from Seneca Lake to the Chemung river, a tributary of the Susquehanna,—from Crooked to Seneca Lake,—from Utica through the vallies of Oriskany, Sauquoit and Chenango to the Susquehanna,—and from Rondout, near the Hudson, ninety miles above New-York, to Honesdale, from whence it is connected by a rail-road to the coal mines of Carbondale; and those from Black River to the Erie Canal at Rome, and from Rochester up the rich valley of Genessee river, to the Alleghany, are being constructed. The aggregate length of these canals is between six and seven hundred miles. That of the Black River makes the navigation of the Erie Canal available for a large portion of the north-eastern part of the State, including Lewis, Jefferson, St. Lawrence, and Oneida counties.

There has already been, and will be expended by this State, on all these avenues of trade, \$19,000,000, and by private companies about \$4,000,000, making 23,000,000.

Oswego is a flourishing town, of about six thousand inhabitants, and having the most commanding position on Lake Ontario for a commercial emporium, it must become a place of very considerable consequence. Owing to the measures which the national government has taken, to render the harbor commodious and safe, it will be the chief entrepot for the imports and exports of a large portion of the population on the American coast of the lake, as well as of Upper Canada, bordering thereon; and by the Welland Canal there is a communication for brigs and schooners with the three other great lakes. So considerable, already, is the demand for the means of transportation on Lake Ontario, that there are, at least, twenty steam-boats and more than a hundred other vessels. Seventy schooners are owned in Oswego, which find constant employment so long as the lake is navigable.

The Oswego river, having for its sources Oneida, Skeanentoles, Owasco, Cayuga, Seneca and Crooked Lakes, and there

being a descent of about one hundred and twenty feet, a large portion of which being within the town, the water power for mills and factories is of great capacity and value, and is now extensively employed.

The distance from Oswego, by the canal, to its junction with Erie, at Syracuse, is only thirty-eight miles, and from thence to Albany about one hundred and ninety.

This beautiful town has grown up within the last ten or fifteen years, but the site was early selected as a military post, and is notorious for being one of the most important on the north-western frontier during all the Indian and French wars, that of the revolution, and the last with Great-Britain; for it was the only point on the lakes to which there was nearly a complete water communication with the Hudson River, afforded by Oswego River, Oneida Lake, Wood Creek and the Mohawk. On the opposite heights, at the entrance of the harbor, are the remains of the fortifications which were erected by the French and British armies, during the long and desperate struggle, of those two rival nations, for supreme power, over the colonies of North America.

The Chemung Canal is becoming of infinite consequence, as a coal field has been opened in an extensive valley in Pennsylvania, distant only twenty-three miles from the Chemung Canal, of an inexhaustible extent, which affords a bituminous species, that is of surpassing excellence. General Swift, formerly chief of the corps of United States Engineers, and now one of the most able and eminent in the civil department of that science, resides at Geneva, on Seneca Lake, and informed me a few days since, that the coal combines, in a more eminent degree, all the valuable qualities of the anthracite and best bituminous kinds of any which he has ever seen; and as fuel, and for all the purposes of furnaces and forges, it has been fully tested, and is pronounced incomparably superior to that of any other location yet discovered in the United States.

Although there is, as yet, a land transportation of twenty-three miles to the canal, the coal has been delivered at Geneva for five dollars per ton; but a rail-road will be finished next summer between the mine and the canal, which will so much reduce the expense, that it may be afforded at three dollars per ton, to all the

settlements situated on the shores of Seneca Lake; and when the Erie Canal shall have been enlarged, there is no doubt but that this coal can be sent to the Atlantic ports and sold as cheap, at least, as that imported from Great-Britain.

In addition to all the public works which have been named, two main lines of rail-road have been projected between the Hudson and Lake Erie, one extending from Albany to Buffalo, and the other from a point on Hudson River, twenty-four miles north of the City of New-York, to Dunkirk and Portland, its two western termini, which is five hundred and five miles in length, and it is estimated that it will cost \$6,000,000. The portions of the former between Albany and Utica, Syracuse and Auburn, Rochester and Batavia, and Lockport and Buffalo, are opened, being nearly two-thirds of the whole distance.

But a still more gigantic work has been undertaken,—the enlargement of the Erie Canal, by which its capacity will exceed that of the present at least seven fold, being seven feet deep, and seventy wide, with double locks of augmented dimensions, which will furnish the means of convenient transportation, for not less than ten millions of tons annually; and the enlarged size of the boats, by which it can be navigated, will immediately reduce the cost of freight nearly one half; and it is contemplated that ultimately the tolls will be so much lessened as to amount to only four cents on a barrel of flour from Buffalo to Albany, instead of thirty-two cents, which is now paid.

Many of the new locks and other structures of masonry, have been commenced, and the workmanship is superior to any I have ever seen. The aqueduct across the Genesee river, at Rochester, will be a truly Roman work. The engineer is entitled to the highest commendation for the plan, and the masterly manner in which it is being executed. It admirably combines strength and durability of material with scientific construction, elegance of form and artistical perfection, in the preparation and symmetrical arrangement of the ponderous marble blocks of which it is composed.

It has been determined that the enlargement shall be effected within five years, and the estimated expense is \$15,000,000.

Thus the amount which the State must expend under existing laws, will be \$20,000,000, and with the sums which must be

paid for taking the private rail-roads for public use,—and which should most certainly be done, and for improving the present canals, will make the enormous sum of \$40,000,000; and yet such will be the surplus revenue from the canal fund and tolls, beyond the annual interest, on the money borrowed, that it will form a sinking fund, which will be sufficient to pay off and reimburse the whole principle and interest, in twenty-seven years.

Your friend and servant,

H. A. S. DEARBORN.

LETTER NO. V.

BUFFALO, DEC. 11, 1838.

To the Secretary of the State of Massachusetts:

DEAR SIR,—As it was intimated, in my former communications, that other highly important lines of navigation had been commenced, and were to be ultimately opened, between Lakes Erie and Ontario, and from the latter to Hudson River and Lake Champlain, it is proper that a more detailed account of the manner in which those objects are to be accomplished, not only within the territory of the United States, but through the adjacent colonial possessions of Great-Britain, should be given.

These several works will vastly extend the sphere of commercial enterprise, by diminishing the expense of transportation, giving a much broader diffusion to the products of the country bordering on the great lakes, as well as increasing the number of the chief and direct sources of its imports on the Atlantic coast.

In the expectation of diverting a large portion of the trade which the Erie Canal had concentrated at the city of New-York, towards Montreal and Quebec, a company was formed in the Canadas, which has been aided by the local and national governments, for constructing ship canals, that would obviate the impediments occasioned by the Falls of Niagara, and the Rapids of the St. Lawrence, to a free intercourse between tide-water and the upper lakes.

The first of these grand avenues for trade, which has been undertaken and completed, is the Welland Canal. It commences at Port Colborne, in Graverly Bay, about fifteen miles

west of Fort Erie, and extends nearly due north to Chippewa River, which it crosses eight or ten miles above the town of Chippewa, and is continued to Fifteen-mile Creek, at the mouth of which it debouches into the harbor of Port Dalhousie, on Lake Ontario. The nearest approach to Niagara River is at a point in Thorold, west of the Falls, and distant five miles therefrom.

This canal admits the passage of vessels of more than a hundred tons; but its location is not considered the most eligible which could have been selected, and it is not of sufficient capacity to accommodate steam-boats, and fully subserve all the great purposes of its construction; still there is considerable transportation upon it; but the greatest portion of the products which descend through this channel, instead of reaching Montreal, as was anticipated, are landed at Oswego, and from thence are sent to the Hudson River, by the Oswego and Erie Canals, although there is now a direct steam-boat conveyance from Kingston to Montreal by the Rideau Canal.

This last named new channel of communication has been formed, by the construction of a canal from Kingston to Bytown, on the Ottawa River, a distance of one hundred and twenty-six miles; and from thence the obstructions of falls and rapids of the river have been obviated by the Grenville, Blondeau, Carrillon and La Chine Canals. The locks are thirty-three feet wide, and one hundred and thirty-three feet long.

The Rideau Canal is a stupendous work. It was commenced under Wellington's administration, and cost the British government six millions of dollars. A distinguished Engineer* of the United States has stated, that the works at the various falls are some of the finest specimens of hydraulic architecture, on the continent of America. At Bytown are eight consecutive locks, of from ten to eleven feet lift. But the most remarkable work which has been achieved, is at Jones's Falls, consisting of a dam, sixty-two feet in height and four hundred long, in solid masonry, and is among the most perfect in existence.

It is by this route that all the supplies destined for the upper province are sent from Montreal to Kingston, and the occupation of the Canadian *Voyageur*, has, therefore, ceased; his celebrated

* Captain W. G. Williams, Topographical Engineer

boat song is no longer heard on that vast expanse of waters, which for more than two centuries were his exclusive realm,—its hilarious echoes have died away, amidst the isles and forests of those interminable lakes and rivers, which had been so often traversed by his light and rapid bark; and the rush of the fiery steam-boat now startles the wild and wondering Iroquois, in his solitary cabin, as it sweeps majestically through the foaming cataracts of the broad, deep, and furious Ottawa.

A much more important project has been undertaken by the colonial government, for rendering the St. Lawrence navigable from Kingston to Montreal, by the large steam-boats which are employed on Lake Ontario. To accomplish this, canals are to be made round the rapids of the Long Sault, Coteau de Lac, and from La Chine to the harbor of Montreal. The former is nearly completed. It commences at Dickinson's Landing, a hundred miles below Kingston, and extends to Cornwall, a distance of eleven miles. The canal is ten feet deep, one hundred feet wide at the bottom, and one hundred and forty at the surface of the water. The locks are finished, and are the largest on this continent, being fifty feet wide, and one hundred and ninety-six feet long. They are formed of blocks of a superior quality of compact black marble, which is obtained in the vicinity of the line of the canal, and, when polished, is nearly as beautiful as that from the remarkable quarries of Kilkenny, in Ireland. There has been expended on this grand work one million five hundred thousand dollars; and I was informed by one of the superintendents, that it will require about two hundred thousand dollars more, before it can be opened for navigation.

The second canal will be sixteen miles in length, and the third nine. They are to be of the same capacity as that which has been described. From Montreal to Kingston, by this route, is two hundred miles, which requires only thirty-six miles of canal to render the St. Lawrence navigable for steam-boats, throughout its whole extent, and will open a direct communication between Quebec and all the towns on its banks and the shores of Lake Ontario and the Niagara River, as high as Queenstown, a distance of more than six hundred miles.

But, on the American frontier, a still more imposing line of navigation, than either of those which have been named, will be

opened between the lakes and the ocean, by the construction of ship canals from the Niagara River to Lake Ontario, and from Oswego to the Hudson.

Among the works of internal improvement which were emphatically recommended to the immediate attention of Congress, in the memorable report of Mr. Gallatin, a large canal, for giving freedom to the commerce between Lakes Ontario and Erie, was deemed of the very first consequence; and the subject has never ceased to command the profound consideration of that numerous population, which will be immediately benefited by its construction, and of the national government.

The waters of the great lakes above the falls of Niagara, include an area of 150,000 square miles, and presents a coast within the United States 3294 miles, and on the Canadian shores of 2425,—developing, in the aggregate, a line of navigation 5719 miles in extent, which is nearly double that of the distance between our Atlantic ports and those of Europe. Even the portion within our own territory is nearly three times as long as the whole sea coast, from Passamaquoddy to the western bounds of Louisiana. The Niagara ship canal, with those from Oswego to the Hudson, and from Chicago to Peru, at the foot of the rapids of the Illinois river, would afford a steam-boat inland navigation from the city of New-York to New-Orleans, which would not exceed in distance the route by sea. What an indissoluble golden chain will thus be formed for binding the several States of the Union more firmly together. Interest, and the facilities of intercommunication, will break down the barriers of dissimilar customs, obliterate sectional prejudices, and induce a more lofty and enduring patriotism among the citizens of the north and south, the east and the west. All will perceive, that to insure general prosperity, and give strength and grandeur to the republic, they must cease to entertain jealous and selfish opinions, and become, in the broadest and most comprehensive acceptation of the terms, harmonious co-laborers, and ardent fellow citizens of this vast national family of freemen, whose noble efforts are strenuously directed to the advancement of civil liberty, the augmentation of human happiness, and the fullest development of all the energies of man, when left unrestrained in the illimitable exercise of his most exalted faculties.

As the construction of a canal round the Niagara Falls has been properly considered a national work, surveys were directed to be made in 1835, under the direction of the Chief of the Topographical Engineers; and that duty was performed in a most thorough, skillful and highly satisfactory manner, by Captain Williams, of that very useful and important corps.* I have not seen any report on hydraulic engineering, in which is concentrated a greater fund of information in relation to that subject, or where more scientific and practical intelligence has been displayed, than in the means devised for obviating the stupendous impediments, which the bold and extraordinary features of the various routes present; and especially in surmounting, by a line of enormous double locks, a perpendicular height of over three hundred feet, between the two levels of the termini, and more than two thirds of which occurs in a horizontal distance of less than a quarter of a mile. The report is accompanied by several beautiful maps and plans, which were executed by Captain Williams's accomplished assistants, Lieutenants Drayton and Reed. This able and meritorious officer examined and surveyed four main routes. The first, commencing at Porter's store-house, near old port Schlosser, is continued near the bank of Niagara river to Lewiston; the second, beginning as above, and passing up Gill Creek, descends the ridge south of the village of Lewiston, and terminates at the mouth of four-mile Creek; the third ascends Cayuga Creek, and crossing the ridge at Pekin debouches at the mouth of Twelve-mile Creek; and the fourth commencing at the mouth of Tonawanda Creek, ascends the same to Pendleton, and descends at Lockport to the valley of Eighteen-mile Creek, which it keeps to its mouth. There are variations indicated, as practicable and worthy of notice in several of the routes. Captain Williams seems to consider that the second is the preferable; but there are so many conditions of a commercial as well as a military character to be taken into view, that the subject should be profoundly investigated in all its aspects and bearings, before any route is decided upon. The expense of such a grand public undertaking should not form one of the elements in estimating the relative merits of either; but that selected, *cost what it may*, which

* I am indebted to Captain Williams for most of the facts in relation to this subject.

will best subserve the purposes of its projection, not only as respects the interests of these sections of country, which are most immediately to be benefited, but of the whole of the union.

In the event the Tonnawanda and Lockport line should be selected, the canal should be constructed entirely distinct from the existing one, if it is practicable ; so that the different kinds of navigation, peculiarly adapted for each of those channels of commerce, should not be impeded or jeopardized in any portion of their several routes.

Captain Williams has recommended that the locks should be two hundred feet long and fifty feet wide, and the canal ten feet deep and one hundred and ten feet broad at the surface of the water.

The maxium expense he estimates, at the comparatively small sum of only about five millions of dollars.

As the subject has been frequently brought before Congress, and several able reports favorable to the views which have been so long entertained, by the most enlightened advocates of an enlarged system of internal improvements, it is confidently believed that its merits are, at last, so well understood, that another session will not be allowed to pass without the necessary appropriations being made, for the commencement of the work, as early as next summer ; in which event the very intelligent officers of the Topographical corps will have an opportunity of evincing their practical skill, as well as their scientific attainments, in executing a work which cannot fail of redounding to their credit, for the genius and talents which must be employed, and to the honor of the nation, for its wisdom and munificence in projecting and completing an artificial channel, that will surpass in grandeur and importance the celebrated canal, which, during the reign of the Pharaohs and Ptolomies, united the waters of the Red Sea with those of the Nile.

The extensive and very useful services which the Topographical Engineers have rendered to the State and National governments, have not been sufficiently appreciated, or the meritorious character of that band of well educated, laborious and efficient officers, so well understood as is desirable, for warranting the endowment of all the means which are indispensable for a full development of a comprehensive civil and military establish-

ment, that embraces the widest range of important duties, of any which has been organized since the foundation of the government. It has been too limited in the number of officers and the diversity of objects, which should be included in the field of their labors.

Besides such explorations and surveys as are necessary for the specific purposes connected with the defence of the country, the various lines of communication, afforded by roads, railways, and canals, and the location of works for improving the harbors on the sea-coast and the lakes, and the navigation of rivers, the construction and publication of maps, of every portion of the country, based on accurate trigonometrical principles, and the erection of all the hydraulic and architectural works, other than such as belong to fortifications, should be added to the duties of the corps, while geology should form a distinct department of it, as that science embraces one of the most extensive, interesting and useful branches of natural history, from its immediate connection with the arts, and offering numerous great sources of national industry, prosperity and wealth.

Give to this corps ample moral and physical means for rendering it capable of accomplishing all the purposes which may properly be ranged within its broad sphere of action, and the beneficial result will be as far-reaching and conspicuous, as they will be astonishing and glorious to the nation. Hitherto the officers have been engaged in reconnoissances and surveys, and have not been favored by opportunities of carrying into effect, the various extensive plans for public works, which they have industriously matured; but that they will be as eminent, in the actual illustration, as they have been exact in preliminary investigations, ingenious in theoretical modes of construction, perfect in the details of plans and accurate in estimates, we have the most complete assurance, from what they have, thus far, been permitted to perform.

But, above all things, when the time for *construction* comes, may the preposterous notions, so prevalent in this country, as to the management of grand schemes of improvement and all public and private works, be abandoned. By some unaccountable and irrational process, a conclusion has been reached, that when a road is to be made, a bridge or any vast edifice created, or any other remarkable and expensive object is to be achieved, there

must be a board or committee constituted, consisting of a number of members, which are multiplied in proportion to the immensity of the plan which is to be carried into effect, notwithstanding the experience of all time fully demonstrates, that there never was any thing pre-eminently well done, when more than one mind was employed. The Parthenon, the Apollo, and the Principia were each the results of one gifted man. Every great truth, fact, discovery, invention, deed, or act, which is most memorable in the annals of the world, is to be traced to one genius. Combinations of men never make a single stride in mental advancement. It is for physical operations alone that men should be brought to act by multitudes. Neither the National Academy of France, or the Royal Society of London, have added a page to the volume of knowledge. They have but recorded the labors of individuals, and have become eminent, not by their associated efforts, but by the splendor thrown over them by such mighty men as La Place and Newton. All the artists of the age could not have executed the frescoes of the Vatican, or the cartoons of Raphael. What union of genius could have elaborated the immortal poem of Milton, or the dramas of Shakspeare? Whatever there is in science, letters, and the arts, that commands universal admiration, ONE MAN achieved. Columbus imagined and discovered a new world, Gallileo extended our vision into the unexplored infinities of the heavens, and Locke flashed a vivid ray of light through the dark and bewildering labyrinths of the human understanding. In fact, whenever many men have been employed to do that which it was desirable should be best done, the invariable consequence has been, that it has been done in the worst possible manner. If among them there was an individual capable of executing the work, he was so circumscribed, or impeded in his movements, that his energies were prostrated, and he became as imbecile and useless, as the inert mass, of which he was but a mere component part. He may have been endowed like a god, but was incapable of *independent action*, and his genius, and talents, and skill, and erudition were unavailable and worthless. As well might we fasten the jessies of an eagle to a Promethean bolt, in a rock of the mountain, and then bid the noble bird mount into the emperion.

Your friend and servant,

H. A. S. DEARBORN.

LETTER NO. VI.

BUFFALO, DEC. 22, 1838.

To the Secretary of the State of Massachusetts :

DEAR SIR,—The reasons for enlarging the Oswego Canal, to the Hudson, to the size of that which has been proposed, between Lakes Erie and Ontario, are so powerful, that it will certainly be done, after that shall have been completed, either by the United States or this State,—when the main line from Buffalo is being developed, to the capacity that has been determined on, to its junction with the Oswego canal, at Rome.

These canals, besides avoiding the delay and expense of transshipment of the imports and exports, of the ports on the upper lakes, will save an artificial navigation, on the line of the Erie Canal, of two hundred miles, and only increase the actual distance fifteen miles; and it has been ascertained that even in its present condition, it does not cost as much, by thirty per cent. to transport goods over this route and the Welland Canal, from New-York to Cleveland in Ohio, as through Buffalo, by the Erie Canal. In confirmation of this fact, it is stated, in the luminous report made to Congress last winter, by the Hon. A. P. Grant, as chairman of the committee on roads and canals, that from an estimate laid before the committee, it appeared that, of the twenty-five thousand tons of merchandize, which was shipped from New-York west, in 1835, and passed through Oswego and Buffalo, four-fifths took the latter route. Had the whole passed

either port, the different rates charged on each would have been as \$600,000 to \$365,000, leaving a result in favor of Oswego of \$235,000.

But there is another very imposing view, in which the Niagara ship canal is to be considered, as connected with the contemplated line of communication, by a canal, or rail-road, and possibly both, from Ogdensburgh on the St. Lawrence to lake Champlain; and from whence the products of the West can be sent to all parts of Vermont, New-Hampshire, Maine, Massachusetts and Connecticut, if those states are roused to a just conception of their vital interests, by a broad development of the natural and artificial means, which are at their command, for opening such extensive markets for their articles of domestic industry, the fisheries, and of foreign importations, as can be profitably exchanged, for those of that immense region, to which they may be directly and cheaply transported.

Ogdensburg now has a transportation line of schooners to Chicago, in Illinois, and the intermediate ports; and Oswego carries on a very considerable trade with the upper lakes, through the Welland Canal; although it but indifferently answers the great purpose for which it was formed, from a defect in its capacity, and the delays which are occasioned in consequence of the accidents to which it is liable, from the imperfect manner in which the work was executed.

Ogdensburg has, within the immediate surrounding country, invaluable sources of wealth, which will render that town the most eminent for its extent of business and population, of any, between Montreal and Oswego, should neither of the new channels of transportation be formed; but if all are completed, its rapid rise, in commercial prosperity and consequence, is beyond all doubt. The harbor is excellent, and may easily be rendered more capacious and secure, at but little expense, when compared with the business, which will be there concentrated, in the progress of events, which are daily becoming of greater import, with the general march of internal improvements.

The town is situated at the mouth of the Oswegotchee River, directly opposite Prescott, and about sixty miles below the entrance into the St. Lawrence River from Lake Ontario, one hundred and ten from Oswego, one hundred and seventy from Roch-

ester Landing, near the mouth of Genessee* River, and two hundred and sixty from Lewiston on the Niagara.

The Oswegotchee has numerous tributary streams, which extend into St. Lawrence, Jefferson, Lewis, Herkimer, and Hamilton counties; and between four and five miles above Ogdensburg it receives the waters of Black River, which is twenty-four miles long, and varies in breadth from a quarter of a mile to three. It is navigated by steam and other boats, and thus becomes a very convenient means of communication with a large tract of country. Below the junction of the outlet of Black Lake with the Oswegotchee, there are two rapids and a very considerable fall, near the mouth of the river, which furnish most valuable hydraulic powers, that are already used to a considerable extent; there being two large flour, two grist and two saw-mills, three founderies, extensive distilling and tanning establishments, machine and other factories.

Ogdensburgh was the site of a garrison, in the old colonial and Indian wars, and remains of the fort and stone barracks, erected by the French, are to be seen, at the entrance of the harbor. It was also an important military post, during the last war with Great-Britain; but, at its close, did not contain more than three hundred inhabitants, and there are now more than three thousand.

The county of St. Lawrence is very prolific in mineral treasures; besides numerous quarries of free and lime stone, and marble, there are extensive lead mines in Rossie, near the upper end of Black Lake. Two veins have been opened, which I examined. They run vertically through hills of granite, and are from two to three feet thick, descending indefinitely. The ore is in chrystals, mixed with white granular lime-stone, which is easily crushed, by iron cylinders, and the lead obtained by washing. The smelting works, erected within two years, have yielded a hundred tons of the purest lead, in pigs, per month; and the quantity can be increased to a vast amount, as there is a stream, which falls into Black Lake, that affords ample water power, for

* In a former letter, I stated, that Genessee meant *Pleasant Valley*; but Ho-non-de-uh, a young and well educated Seneca chief, informs me that Genessee is pronounced by the Indians Jo-nas-he-yu, and the word is derived from Gata-he-nas-he-yu, and means a *Good Valley*—having a reference to the *fertility* of the soil, as well as the *beauty* of the scenery.

all the various processes of preparing the lead for market. It is chiefly sent to Albany.

In the towns of Waddington, Norfolk, Fowler, Brasher, Rosalie, and many other places, are inexhaustable deposits of iron ore, where large furnaces are in operation; and in Canton, about twenty miles southeast from Ogdensburgh, a rich copper mine has been recently discovered, which will soon be wrought, and there are indications of other deposits of that important metal,—which is only second to iron in its general use, for mechanical and other purposes.

At present, the Atlantic imports and exports of Ogdensburgh are by the River St. Lawrence and Lake Ontario to Oswego, and from thence by the canal line to Albany; but the canal, from Rome to Carthage, on the Black River, is to be continued to this town.

Waddington is a flourishing town, eighteen miles below Ogdensburgh. Opposite the village, is Ogden's Island, containing nine hundred acres of land, equal to any in the state, for wheat, and all other products of northern agriculture. Mr. Ogden has a beautiful mansion on this picturesque river isle, and cultivates a large farm, in such a superior manner, as renders it a model of husbandry, to the surrounding country. He has raised sixty bushels of wheat to the acre, by adopting the most approved English system of tillage. He is zealously devoted to rustic labors,—the most honorable in which man can be engaged, and from the numerous useful experiments he is continually making, is doing much for the benefit of the country.

That there will be a canal or rail-road,—and that soon, from Ogdensburgh to Lake Champlain, is as certain as the existence of that natural receptacle, for a large portion of the imports and exports which are to be exchanged between the Atlantic and Mediterranean ports of the West.

By the annual report of the Commissioners of the Canal Fund of this State, for 1837, it appears that the amount and value of the property transported on the canals during that year were as follows :—

Products of the Forest 618,741 tons, and valued at \$6,146,716 ; Agriculture 206,042 tons, and valued at \$16,201,331 ; Mines, &c. 163,000 tons, and valued at \$3,134,766 ; Manufactures,

81,735 tons, and valued at \$6,390,485; Merchandize, 94,777 tons, and valued at \$23,935,990; total tons, 1,171,296; total value, \$55,809,288; while the amount that descends the Mississippi and its vast tributaries to New-Orleans is only about \$70,000,000.

The tolls on the above amounted to \$1,292,623 38.

The numerous natural and artificial lines of intercommunication, which I have attempted, but very imperfectly to describe, and which centre in the valley of the Hudson, exhibit the wonderful influence which the construction of the Erie Canal has already produced. If the shores of this western Pactolus do not glitter with the golden sands, which rendered the oriental river celebrated in antiquity, there must be an amount of wealth upheld and floated on its waves, which will surpass in value the most precious tribute, that ever entered the imperial gates of commerce. What an exciting and glorious spectacle do the public works and enterprize of this peculiarly favored State present. The prospective results, from the mighty causes which are and soon will be, in full action, are far beyond what the most gifted human prescience can prognosticate; not merely as relates to this rich section of country, and its appendant regions, but to the whole Republic. The magnificent revelations of coming years, will be such as no other age or nation has experienced. We have been wrapt in wonder at the astonishing exhibitions, which genius, intelligence and industry have presented in our day; but the next generation will look back upon what has been done, and is doing, with an amazement, which will be as much greater, as the extent of population and its advancement in all the arts of civilization, will exceed what now exists.

Will not the States of New-England make a prompt, generous and determined effort, to participate in the advantages of that immense trade, which has been brought to their very borders? The distance from Boston, Portsmouth and Portland, to Chicago, in Illinois, is about 1,340 miles, over which an uninterrupted line of communication, by steam and canal boats, has been completed, except for the comparatively short distance of 160 miles. But in a few years this medium of transit will be extended to St. Louis, which will increase the length of actual inland navigation

to 1,670 miles, save the small margin between the Hudson and Lake Champlain, and the Ocean.

Thus nature and the enterprise of other states have left but *one-tenth* of the entire route to be completed, and that, too, devolving on a people, whose means are vastly more ample, than were at the command of their adventurous fellow-citizens in the west; and who, too, have been celebrated for their daring spirit of adventure, in all other branches of human industry. In commerce, navigation, and manufactures, and whatever enlightened intelligence and physical skill can achieve, they have displayed a boldness of purpose, and an energy of character, which have rendered all the maritime portions of the globe their tributaries, and caused the rude products of every clime to receive an additional value, and become new sources of wealth, by their unrivaled mechanical ingenuity and untiring labor. How is it that they are so far in the rear of the age, and, until a recent period, have been inactive,—yes, and worse,—uninterested spectators of that sublime movement, in which all the most civilized nations of the earth are zealous participants? Is it that they have been so long accustomed to look forth upon the deep, and seek in distant trans-marine regions for employment of capital, and an excitement to vigorous and successful action, that the immense territory, which extends far beyond their bleak hills and was so long a wilderness, has not claimed that deep and merited attention, which its present resources and future importance so imperiously demands? Or can it be that so rapid has been the change of its natural features, and so magical the celerity with which the game-grounds of the Indian have been converted into luxurious fields, and the wild and trackless range of the lone-wandering hunter reared into populous and flourishing states, by that unhalting and freedom-seeking Saxon race, which first leaped upon the rugged shores of New-England, that the real fact of such a marvelous change and such stupendous results has been produced, was either too generally unknown, or the advantages which might be derived discredited?

But at last Massachusetts has turned her eagle gaze westward, and has entered the brilliant career of internal improvements in such a liberal and zealous manner, as gives the most cheering assurance, that whatever the general interests of the citizens

require, will be inevitably accomplished by their own individual exertions and the efficient co-operation of the government. Like a Grecian competitor at the Olympic games, that Commonwealth runs no ordinary race, when the prize is worthy of her prowess, energies and skill; for on the hazardous result she boldly pledges her fortune and her fame.

Already four lines of rail-road have been commenced, which radiate from the capital of the State, and the aggregate portions which have been completed, exceed one hundred and eighty miles in length. That to Providence has been extended through Rhode-Island to Stonington in Connecticut, a distance of ninety miles. The eastern line has reached Salem, and within two years will touch the bounds of New-Hampshire, when it will certainly be prolonged to Portland, Augusta and Bangor, in Maine. The north-western route has been opened to Lowell and Nashua, and is to pass up the right bank of the Merrimac to Concord, and probably from thence to near the confluence of White and Connecticut Rivers; for there are now constantly employed nearly a hundred wagons, drawn by eight horses, and carrying four tons, between the towns on the eastern flank of the Green Mountains and Boston, on that route of travel, as I ascertained, last autumn, while passing over it.

Branches have been made from the Providence route to Dedham and Taunton, and a company has been incorporated for continuing the latter to New-Bedford. From the Lowell line, another has been constructed to Haverhill, on Merrimac River, which is destined to pass on to Exeter and Dover, if not beyond.

The GREAT WESTERN RAIL-ROAD, for connecting the Erie Canal with Boston harbor, has been completed to Worcester, and next autumn will enter the valley of Connecticut River, at Springfield, and the following year be opened to the confines of New-York, and probably be finished to Albany.

This is the last link in the lengthened chain of intercommunication, whose terminating rings are secured to the piers-heads of Boston harbor, and of the port of St. Louis. It unites the ocean with the waters of the Mississippi, and demands the united favor, patronage, and energetic co-operation of the people, and the government of the State, to bring it to an early and successful conclusion. Next year there will remain but about sixty

miles to complete,—a large portion of which, is in the progress of gradation. From the bounds of Massachusetts to Albany, there are thirty miles which will require the generous exertions of the citizens of New-York to execute; and from the spirit which has already been evinced, we have the fullest assurance that the work will be undertaken and finished, as soon as the rails are laid from Springfield to the bounds of Massachusetts; and, in 1840, we shall be united, forever, with the perpetually expanding West; and Boston become the second maritime emporium, for all the States which touch the great lakes.

The grandeur, present importance, and future influence of such a vast line of internal commerce, can only be but partially estimated, even when the elements, which enter into the calculation are so numerous, apparent, and incontrovertible, as has been unfolded, by the most detailed and exact official data.

How imposing is the subject, in whatever aspect or relation it is considered. In this single route the six New-England States, with New-York, Ohio, Indiana, Illinois, Michigan, and Missouri, and the territories of Wisconsin and Iowa, are directly interested. It is their chief and common channel of intercourse for the people, and the reciprocal interchange of the products of all and each, with each other. Thus twelve of the twenty-six States, and two out of the three remaining territorial governments which compose the Union, are participants in the countless, measureless, and unceasingly augmenting benefits of this wonderful national highway. It is the most remarkable commercial avenue that ever was opened by man. There is no parallel in the proudest days of antiquity; and instead of the possibility of its being ever rivaled in any country, it will, itself, be triplicated in extent; for the true and ultimate terminus is to be on the shores of the Pacific Ocean; and the splendid Alexandria, of the Columbia River, will become the entrepot for the products of this vast continent, of China, and India, and of Europe and Africa.

These numerous trade-connected States and Territories contain an area of about 473,000 square miles, which is nearly half of the whole territory of the United States, embraced in the States and organized territorial governments, and include a population, which cannot now be less than 7,000,000.

But what is of still much greater consequence in the examination of this subject, the character, industry and intelligence of the inhabitants are not to be forgotten, but kept conspicuously in view, as well as their various occupations. In the first place, such as are farmers, have a soil and climate for furnishing all the great staples of food, and the chief one for clothing, which are the best in North-America. From the longitude of Utica to the Mississippi, there is not such a cattle, sheep, and wheat-growing region on the north.

In foreign commerce, where has there ever existed such a people as the hardy and adventurous navigators of New-England,—the Carthaginians of modern times in ocean explorations. They, also, are the fishermen of the nation. Not only the sea-coast, from Cape May to Grand Menan, but Georges' and Grand Banks, as well as all the capacious estuaries, gulfs and bays which plunge into the continent as far as the frozen ocean, are sources of those inexhaustible treasures of the deep, which make up such an immense amount of the product of Yankee industry. Besides all this, there are over four hundred whale-ships which traverse the coasts of Africa, Brazil, Chili, and Peru,—the South Polar Seas and the Eastern Archipelago, to the Island of Japan. The capacity of the vessels employed in foreign commerce, the coasting trade and fisheries in New-England, amounted, in 1834, to over 700,000 tons, which was nearly one half of that of the whole Union. Then there are the products of the manufactories, which, in Massachusetts alone, amount to nearly \$90,000,000 annually.

What cannot be accomplished by such a united mass of valuable and various industry, as will co-operate to swell the business of this ever-lengthening and wide-spreading channel of national exchange? Like an ecliptic, it belts the physical sphere of the Republic, and within which, nearly half the constellations that fill the cycle of our political zodiac, will shed their effulgent and cheering influence upon those, who enter this triumphant career of commercial enterprise.

Your friend and servant,

H. A. S. DEARBORN.

LETTER NO. VII.

BUFFALO, DEC. 11, 1838.

To the Secretary of the State of Massachusetts:

DEAR SIR,—There is yet another line of transportation required from Springfield, up the valley of Connecticut River, as far as Barnet, at least, if not to Lancaster, which is only second to that of the Great Western route, and which cannot fail of commanding an early attention of the Legislature, and of the numerous intelligent and enterprising inhabitants, who are so directly interested, in the establishment of a more expeditious and economical mode of conveyance, for the products of their agricultural and mechanical industry, and the great amount of imports which are received in exchange therefor.

That important river which descends from the highlands of Canada, between Vermont and New-Hampshire, and traverses the whole latitude of Massachusetts and Connecticut, to Long Island Sound, a distance of over four hundred miles, may be appropriately called the Ohio of New-England; for there is no portion of its territory which presents such a continuous and broad extent of fertile land, and offers, at the same time, such a variety of soil,—from the rich alluvial intervals, to the spontaneously grass-growing acclivities of the opposite hill sides, for all the purposes of northern agriculture.

It is also prolific in several valuable mineral productions. Besides free-stone and granite of superior quality, for architectural purposes, there are deposits of roofing slate, equal to the best imported from Wales; and there are many localities, where iron ore is in sufficient abundance, for authorizing the erection of

furnaces. That of Franconia, on a tributary of the Connecticut, is of the very best kind, and sufficient to supply all the north-western portion of New-England, and only requires the facilities of a rail-road or canal, to render these works as important as any in the Union.

Then there is the primeval forest trees, which majestically clothe the flanks of the White and Green Mountain ranges, those northern Alleghanies, which would find a most profitable market as ship timber, and all other purposes, in the numerous sea-ports which indent the navigation-thronged coast of the Pilgrim's PROMISED LAND.*

For the foundation of manufactories, there is no such district of country east of the Hudson. The whole prism of Connecticut River is a mighty and perpetual hydraulic power, from its source to Springfield. Already on its falls and tributary streams, numerous establishments, for the fabrication of woollen, cotton, silk, metallic, and other articles, are in successful operation; and make the valley what it can be, and must be, and will be, by a canal through its entire extent, and the rapid prosperity of the vigorous, enlightened, enterprising, industrious and highly meritorious people, and the foundation and advancement of the towns, which must rise into being and consequence, will be as remarkable and interesting as has been so admirably illustrated at Woonsocket Falls, Pawtucket, Providence, Waltham, Lowell, Dover, Taunton, Chicopee, Cabot, Springfield, and the numerous other important Birminghams, Leeds and Sheffields, which embellish and diffuse wealth along the various water courses of the north-eastern states.

From the remarkable geographical features of the country east of the Green Mountain range, and the position of the chief commercial emporium of all the States north of New-York, those natural facilities, which capacious vallies and the channels of rivers present, for opening improved lines of intercommunication, generally have a direction at right angles, to the lines of travel, —which, as radii, extend from that mart through the intermediate region, to the extremes of its latitude, as far as its western

* New-England is thus designated by the agricultural patriarch, Evelyn, in his incomparable work on the Forest Trees of England, published during the reign of Charles II.

bounds. The construction of rail-roads and canals is, therefore, difficult and expensive, when compared with like undertakings in other more favored portions of the Union. But those very obstacles render improved avenues still more necessary and important; for so great are the impediments interposed on the existing roads, that most of the products of agriculture, and all those of the forest, mines and quarries, are excluded from the markets of the sea-coast, in consequence of the enormous expense of transportation, while the cost of the imports is proportionably enhanced, from the same cause. In fact, the inhabitants in the valley of the Connecticut River are farther from a market, taking into consideration the time and expense in accomplishing an interchange of exports and imports, than those who reside in the vicinity of the great lines of navigation, and are more than four hundred miles from the city of New-York.

It must not, however, be inferred, that the natural difficulties, which the mountainous and rugged surface of the north-eastern states presents, are to be considered insuperable, or so appalling as to discourage all attempts to surmount them; for since the science of topographical, hydraulic, and other branches of civil engineering, have been brought into practical and skillful operation in the construction of roads, railways and canals, it has been fully demonstrated with what admirable adroitness and ingenuity, comparatively, level lines of intercourse have been perfected through all parts of our country, where it had been deemed impossible, to avoid, or conquer the various and imposing obstacles, which were to be encountered.

It has only been necessary, in executing the most difficult work, to secure the services of competent talents, and furnish the requisite means. And whether it was to trace the Simplon road of Napoleon over the giddy height of the Alps, bid defiance to the fury of a tempest, by the breakwaters of Cherbourg and Plymouth, rear a granite Pharos on the Eddystone Rock, in the midst of a stormy ocean, tunnel mountains, and span the profoundest chasms, for the channels of canals, or the route of a locomotive engine, or suspend an iron bridge from the lofty cliffs which frown over the deep Anglesian Gulf, the labor was undertaken with the same confidence of success, as in the erection of a gate-way, to a baronial castle. This has also been gloriously

verified in our own State, by the construction of a naval dock, which would have been honorable to Roman or Egyptian power; and in the erection of the Western Avenue, the real Giant's Crossway through the sea.

There is one other route which the citizens of the north-western portion of the State will urgently and justly require to be opened for their benefit, as well as that of the entire population of the sea-coast. The rail-road to Lowell must be extended to Fitchburg, on the north branch of the Nashua River, and from thence, either through Ashburnham, or Westminster, and down the valley of Miller's River to Greenfield.

Massachusetts having fearlessly entered the wide field of internal improvements, there is no danger of a retrograde movement; so far from it, there are such potent reasons for a firm and forward course, that all which is desirable, and in the power of man to accomplish, will be done, to enable the people in every part of the State, to participate in the advantages of the great trade of the West, and those subsidiary facilities of intercourse, which their agricultural, manufacturing and commercial interests demand.

Maine, New-Hampshire and Vermont must follow the example of the revolutionary Hercules; and place their citizens on an equality with those who are resolutely prosecuting so many and such glorious works, for the present and all future generations. Those States require, and must have, a direct communication, either by rail-roads or canals, between Portland and Lake Champlain; for on the shores of the latter is to be reared a vast entrepot, where will debouch one of the two grand artificial outlets of the five immense Lakes, which New-York, ere long, will have opened upon her own frontier.

The citizens of Maine, in an especial manner, cannot fail of perceiving how immediately that State is to be benefited by such a work; as it will render Portland the maritime port for a large portion of the exports and imports, which will pass that northern channel, beyond the State of Vermont, as well as for a vastly increased amount of those of the intermediate country. Even under the imperfect means of transportation, which have hitherto existed, that flourishing city has been the market for upper New-Hampshire, the eastern towns of the northern portion of Vermont,

and a part of Canada ; but the trade has not been deemed sufficient to warrant the construction of even a better common highway ; rather, the well established fact has not been duly and sufficiently considered, that *improved facilities of intercourse create business*, and often more than quadruple what previously existed. This has been satisfactorily illustrated, by the introduction of steam navigation, on the Hudson, the Sound, the Ohio, the Mississippi, and the Lakes, and the construction of canals and rail-roads all over the United States.

But that erroneous supposition no longer forms one of the elements, for deciding on the course which it is now proper to adopt ; for it is not merely the traffic between the two extremes and along the intermediate country, through which the proposed route will pass, that is to be estimated, but the immense commerce, which is to be added, by opening a communication with that extensive line of navigation, which will be completed from Lake Champlain to the Falls of St. Mary and the harbor of Chicago.

On my return from the Niagara frontier, last autumn, I took the steamboat route, from Lewiston, down Lake Ontario to Rochester Harbor, Oswego, and Kingston, and the St. Lawrence to Ogdensburgh and Montreal, and from thence to St. Johns and Burlington, on Lake Champlain, and across Vermont to the Connecticut River, Concord and Boston, for the express purpose of obtaining exact intelligence, in relation to the practicability and importance of opening a communication, by canals or rail-roads, from Ogdensburgh to Lake Champlain, and from thence into the valley of Connecticut river, and on to Concord and Boston, and easterly to Portland.

The ascent from Burlington, up the valley of Onion river to Montpelier, is very gradual, as there is not a precipitous cascade, in the whole distance, of any moment, and the natural facilities, which the banks present, for a rail-road, are such as admit of its construction without encountering any very considerable acclivity, or other impediment. The descent eastward, down the valley of White River, from the culminating point, to the Connecticut in New-Hartford, is quite as favorable. There are other routes which have been explored, across the Green Mountains, and among them one through the valley of Lamocelle River, has been

surveyed for a canal, which terminates at Barnet, a few miles above the mouth of the Amanaosic. This line has been represented as offering peculiar advantages for a canal ; but the question, as to which should be adopted, so far as relates to the route of communication with Portland, must, in a great measure, depend on the point where that shall reach the Connecticut river. Sufficient data cannot, however, be obtained for deciding on the preference of any of the lines, until thorough reconnoissances have been made, by intelligent engineers.

Within the last four years, while making tours to the grand and sublime scenery of the White Mountain region, I have examined, in nearly their whole length, two lines, and deviations therefrom, from Portland to Connecticut River—a description of each of which, was given to the editor of one of the newspapers in that city, and published.

The northern route passes from Sebago Lake, up the Valley of Crooked River to Bethel, on the Androscoggin River, which has since been surveyed, and ascertained as practicable for a canal, and of course less difficult for a rail-road. From Bethel, the line passes on the right bank of the Androscoggin, to the mouth of Moose River, which nearly interlocks in a meadow, in front of Bowman's log-house tavern, with Israel River, and down the latter to the Connecticut, in the town of Lancaster.

The other Line passes the White Mountain Range, from Conway, through the vallies of Swift and the north-eastern branch of the Pamigewasset, into the valley of the main channel of that prolongation of the Merrimac ; and from thence there are two routes to the Connecticut,—one terminating near Haverhill, and the other at the mouth of the Amanaosic. All these routes must be exactly explored and surveyed ; but there is not a doubt that both are practicable, and either infinitely superior, for a common road, to the unamendable and terrific highway now traveled, that passes the Notch, through the valley of Saco River—which is as bad even in winter, and worse in summer.

The means which Maine has at command, from her vast domain of wild lands, with such others as can be created, without imposing any very onerous burthen on the people, are ample for executing the important public works, which are so indispensable to the prosperity of that extensive and rapidly flourishing State.

In area, it is larger than the five other New-England States, as it contains 35,000 square miles, while they include 33,766 ; and when the population becomes only as dense, as is now the case in Massachusetts, it will amount to 3,150,000. The tonnage of her vessels employed in foreign commerce, the coasting trade and fisheries, is nearly double that of all the other New-England States,—excluding Massachusetts,—and of that of Pennsylvania, more than double that of New-York, and three times greater than that of Maryland.

But the grand line of intercommunication from Portland to Lake Champlain, is not the only improvement which Maine must undertake. A railroad will soon be required, to meet that advancing from Boston to Portsmouth, and another to extend it to Brunswick, Gardiner, Augusta and Bangor.

If the Rip Van Winkles of the Northern Star,* cannot be roused from their somnolency, the young, intelligent and enterprising must muster in their strength, and form an elite band, as patriotic and zealous as that which fearlessly breasted the Persian invasion, and determined to place their wide extended commonwealth, on a level with the most active and successful in internal improvements ; for unless this is promptly and efficiently done, Maine will continue to furnish emigrants to people the western wilds, instead of in turn becoming an Eldorado of the east. It has soil equal to that of any portion of the northern section of the Union ; its coast is studded with embryo ports, and her numerous rivers and lakes only require to be rendered subservient to navigation, and manufacturing purposes, to develop the abundant sources of prosperity and wealth, which have too long been neglected, or inadequately appreciated.

The Granite State has not been indifferent to the general movement throughout the land, in relation to internal improvements ; and various routes have been explored, for canals and rail-roads, which are well worthy of the patronage of one of the earliest established colonies, and which was, at all times, conspicuous for the heroic part it took in the memorable Indian and French wars, and especially that which eventuated in the achievement of national independence. No braver or better troops ever

* The crest of the arms of Maine, is the North Star.

deployed, on the field of battle, than the New Hampshire regiments ; or were sterner patriots, or more gallant soldiers to be found, when any deed of desperate valor was to be done, than Starks, Sullivan, Cilley, McClary, Read, and their numerous companions in arms.

ENERGY is one of the eminent characteristics, of the citizens of that state, and from the demonstrations which have already been made, they and the legislature will not fail to discharge their several duties in a manner worthy of their illustrious predecessors.

As a son of New-Hampshire, and where my progenitor first landed, as one of the persecuted exiles of England ; and where many of his descendants, for five generations, have resided, I feel a profound interest in the prosperity and the proverbially industrious, frank, hardy, bold and adventurous citizens of that ancient and venerated commonwealth ; and I confidently believe that they will maintain that exalted reputation, which was purchased by the best blood of their fathers, in the sacred cause of freedom.

Connecticut has constructed several lines of canals and railroads, and is now actively engaged on others, which sufficiently evince the spirit that is abroad, in that striking example of the ingenious, pains-taking, nomadic, and restless habits, of the **UNIVERSAL YANKEE NATION.***

Rhode-Island,—the first to establish manufactories, and second to no other part of the United States, in commercial enterprise and navigation,—advanced shoulder to shoulder, with her neighboring States, in the career of establishing improved lines of intercourse.

You no doubt are glad that this closes the series of letters in relation to internal improvements—as I leave to-morrow for Boston.

Your friend and servant,

H. A. S. DEARBORN.

* So called by Jefferson.

LETTER NO. VIII.

HAWTHORN COTTAGE, ROXBURY, JAN. 15, 1839.

To the Secretary of the State of Massachusetts :

DEAR SIR,—I intended to have written, at least, one more letter from Buffalo, for the purpose of adding some facts, which should have been included, in the account of the Western States and Territories, and of several of the lines of communication, which will ultimately concentrate in the ports on Niagara River, more fully to illustrate the importance of speedily completing the Great Western Rail-Road, from Boston to Albany ; but indisposition, and the necessity of my return, prevented me from doing so, and I have, therefore, concluded to attempt to fill up the various hiatuses, so far as it was practicable ; still the subject will have been but very imperfectly presented, in all its interesting and momentous bearings.

The canals and rail-roads, which have been projected, completed, or are being constructed in Ohio, Indiana, and Illinois, are generally sufficiently well known, as well as the vast resources and present condition of those powerful States ; but Michigan and the territories of Wisconsin and Iowa, being of very recent origin, and their rapidly increasing population and commercial consequence not so universally understood, it seems proper that they should be succinctly described, from their intimate connection, with the main avenues of intercommunication, from the shores of the Atlantic, to the banks of the Mississippi.

The State of Michigan is formed of two vast peninsulas, which are separated at their extremities, by the Straits of Michillimackinac. The most southern is bounded on the west by Lake

Michigan, and on the east by Lakes Huron, St. Clair, and Erie, and the outlets of the two former. That in the north extends south-easterly, between Lakes Superior, Michigan, and Huron. The latter has, as yet, but a small population, which is chiefly confined to the Sault of St. Mary, and the shores of Green Bay.

The settlement of Michigan has an antiquity as great as that of some of the Atlantic States; for a military post was established at Detroit, by the French Canadian government, as early as 1663. Being nearly surrounded by three of the great inland seas, and traversed by numerous rivers, with a soil, which for fertility is not surpassed by that of any other of the north-western states, the southern peninsula is fast becoming important, from the amount of its agricultural products, and the extensive commercial operations of its numerous ports. It is only about one hundred and sixty miles broad, in its greatest longitude, which makes the distance, between the most interior town and steam-boat navigation, only about eighty miles. But these natural facilities have not been sufficiently favorable to satisfy the requirements of that industrious and enterprising population, which, within eighteen years, has increased from nine to nearly two hundred thousand; and the government has wisely and promptly established a most liberal system of internal improvements,—to carry which into effect, a fund has been created, from the per centage received of the United States, on all the public lands sold, the income from banks, the tolls of the canals and rail-roads, and the whole of the surplus revenue, from all other sources.

Three rail-roads and two canals have been projected across the southern peninsula.

The route of the Southern Rail-Road commences on the navigable waters of the River Rasin, near the shore of Lake Erie, and extends, in a south-westerly direction, to New-Buffalo, on the River St. Joseph, which falls into Lake Michigan, towards its southern extremity, and nearly opposite the port of Chicago. It is 183 miles in length, and the estimated expense is about \$1,500,000.

The Central Rail-Road extends from Detroit to the village of St. Joseph. It is 194 miles long, and will cost \$2,000,000.

The Northern Rail-Road commences at Port Huron, at the mouth of Black River, near the outlet of Lake Huron, and ter-

minates at the rapids of Grand River, which are forty miles from its mouth.

The Clinton and Kalamazoo Canal is intended to unite Lake St. Clair with Lake Michigan. It commences at Mount Clemens, and debouches into the mouth of Kalamazoo River. The length is 216 miles, and the estimated cost \$2,250,000.

The Saginaw, or Northern Canal, will connect the navigable waters of Saginaw and Grand Rivers,—the former falling into the capacious bay of that name, which opens into Lake Huron, about half way between its outlet and the Straits of Michillimackinac. The whole length of this line, including the improvements of the channels of Bad and Maple Rivers, is only fifty-three miles, and the expense will not exceed \$300,000.

The St. Mary's Canal is intended to obviate the obstruction occasioned by the falls, to the navigation between Lakes Huron and Superior, by the construction of a ship and steam-boat channel, which will extend the line of coast for all the vessels of the Great Lakes, at least 1500 miles. The canal is to be ten feet deep, fifty feet wide at the bottom, and one hundred at the surface of the water, and the locks one hundred feet long and thirty-two wide. The fall to be overcome, is only eighteen feet, and the whole length of the canal will be less than a mile.

It is very desirable that the plan of this highly important work should be revised, before any attempt is made to carry it into effect; for when the immense area of the lakes, which are to be united, is considered, and the very limited extent of the canal required to accomplish that object, there should be no error committed, in establishing the dimensions, as has been too frequently the case in this country. The least cross-section of the canal should be one hundred feet at the bottom, and one hundred and fifty at the surface of the water, with a depth of twelve feet; and the locks two hundred feet long and fifty feet wide.

Besides these extensive works, the State has undertaken to improve the navigation of Grand, Kalamazoo, and St. Joseph rivers, which includes a distance of 280 miles. Thus this newly created state, which was not admitted into the Union until 1836, with a population not one third as great as that of Massachusetts has undertaken the construction of various lines of intercourse whose aggregate length is 1100 miles, and involving an expen-

diture of more than \$8,000,000—nearly two millions of which have already been appropriated, although the act for establishing a board of commissioners on internal improvements, was not passed until March, 1837.

In addition to the public works which are to be executed at the expense of the State, twenty four companies have been incorporated, for establishing as many different lines of rail-roads, whose united length is over one thousand miles, and the estimated cost \$6,800,000.

The Territory of Wisconsin now appears to rival Illinois and Michigan, in attracting the attention of eastern emigrants, from the salubrity of its climate, and the excellence of its soil. Laying between Lake Michigan and the Mississippi, the numerous rivers, which have their sources near the central meridional line, and flow into those capacious receptacles, offer great facilities for forming numerous navigable channels, which will unite the ports open to steam-boats, on the east, with every portion of the western bounds of the Territory; and there being neither mountains nor morasses to encounter, and the surface of the country being so very universally level, that not only canals, but rail-roads can be made at a small expense, compared with that which is unavoidably incurred in the Middle and Northern States, from the ruggedness of their features.

As late as 1830 the whole population of the then connected Territories of Wisconsin and Iowa was only 3665; but, in 1836, it had increased to 22,000, and so great has been the tide of emigration, within the last two years, that it is now estimated to exceed 70,000.

The agricultural advantages, mineral resources, and general character of the Territory, have been thus favorably described by Mr. Featherstonhaugh, the Geologist of the United States, in his report of an exploration in the North-west, during the year 1836:—"I have never seen a country of such extraordinary mineral value, embracing, at the same time, a soil, a very great portion of which, is of the first agricultural quality. It is one of the finest demesnes that nature ever offered to man. But no assertion can do justice to its surprising fertility, as it is capable of raising any thing and every thing, susceptible of cultivation, with the least degree of expense. The climate which is cold in win-

ter, but dry and salubrious throughout the year, aids in justifying the expectation that it will soon become one of the most populous, flourishing, powerful, and happy portions of the United States."

The Territory of Wisconsin is embraced within the same parallels of latitude as that portion of Massachusetts which is situated north of Boston,—the States of Vermont, New Hampshire, and a large part of Maine; but the climate in the southern counties, is as mild as that of New-Jersey and Pennsylvania.

Like the whole of that section of the United States between the Atlantic and the Pacific Oceans, which is north of the forty first degree of latitude, this Territory is diversified by numerous lakes and ponds of the purest water, although the surface of the country is not broken into hills and mountains, but is generally undulating, and much of it is of the prairie formation.*

The chief ports on Lake Michigan are Green Bay and Milwaukee; Kewaunee, Manitowock, Sheboygan, Racine, at the mouth of Root River, and Pike, or South Port, are thriving villages. Surveys have been made by the General Government, and plans matured, for the improvement of all of these harbors, by the construction of piers and break-waters; and light-houses have been erected, at the entrance of several of them.

The town of Green Bay, including the villages of Navarino and Aster, is situated at the head of Green Bay, on the right bank of the estuary of Fox River. The French early established a military post at this place, but it was never occupied as such by the United States, until 1816. The harbor is excellent, and when the Fox and Wisconsin Rivers are united, as they will be soon, by the Portage Steam-boat Canal, which requires a cut of only one mile and a quarter in length, it will become one of the most important commercial entrepôts on the upper lakes.

Milwaukee is at the mouth of the river of that name, and about ninety miles south of Chicago. Four years since, it contained only two log huts, and now it has a population of more than 4000. The position is commanding, from the natural and artificial means which can be employed to render it the most eligible port, for the exports and imports of a large portion of the Territory.

* It is a remarkable fact, that there are scarcely any lakes or ponds south of the forty first degree of north latitude, except in Florida.

A company has been chartered for constructing a canal from Milwaukee to Lake Kuskenong, which will be only fifty-two miles in length, and will open a water communication from thence, down Rock River to the Mississippi, of more than 200 miles in extent. The estimated expense is \$1,000,000, and most of the stock has been subscribed. A rail-road will also soon be commenced from Milwaukee to Port Hudson, near the mouth of the Wisconsin River. It will pass through Madison City, which is beautifully situated, near the lower end of the most northern of the Four Lakes, and is the capital of the Territory,—Moundville, Messer Grove, Dodgeville, the place of residence of the Governor, and Wingville. The route is 168 miles in length. A branch, fifteen miles long, has been projected from Dodgeville to Helena, which is on the left bank of the Wisconsin River, and about seventy miles from its confluence with the Mississippi; and a company has been formed for another branch, from Dodgeville, which is to pass, south-westerly, through Mineral Point and Belmont to Mississippi City, which is but a few miles above DuBuque, in Iowa, on the opposite bank of the Mississippi River, and is the port, where nearly all the lead, of the celebrated mines of that name, is shipped. The several lines of rail-road pass through the richest agricultural parts of the territory, and the very centre of the mining region.

Your friend and servant,

H. A. S. DEARBORN.

LETTER NO. IX.

HAWTHORN COTTAGE, ROXBURY, JAN. 20, 1839.

To the Secretary of the State of Massachusetts:

DEAR SIR,—In addition to the canals, in the Territory of Wisconsin, which have been described, one has been projected from Madison City to Arena, which is on the Wisconsin River, and about seventy miles from its mouth. The length of this canal will be between twenty and thirty miles. Another company has been incorporated for extending a canal from Kentucky City, on the Wisconsin, to Marquette, on Lake Winnebago, a distance of eighteen miles.

But the most important navigable line of communication, after the Portage Canal, for connecting the Fox and Wisconsin Rivers, is that which has been proposed, from the mouth and up the valley of Monitoowoc River to Lake Winnebago. The object of this great work is to obviate the objections to the route from the head of Green Bay to the Mississippi, as the navigation of that large expanse of water is not only circuitous and difficult, but at least two hundred miles out of the direct route of the steam-boats and other vessels, which have an intercourse between the various ports on Lake Michigan, and all those on the intermediate lakes, to the Niagara River.

The mouth of the Monitoowoc River is ninety miles south of the entrance into Green Bay. The length of the canal would not exceed eighteen miles, and this steam-boat route, joining that from Green Bay, in Lake Winnebago, the capacious natural basin of both, would reach the valley of the Mississippi, four hundred miles above the mouth of Illinois River, which will be the

outlet of the Chicago ship channel, and thus shorten the distance of transportation several hundred miles, for the towns in a large portion of Wisconsin and Iowa, on that river.

If this last named canal should be constructed, the ports of Monitowoc and Green Bay will not only be entrepôts for the country traversed by the Fox and Wisconsin Rivers, a distance of two hundred and forty-eight miles, but that on both sides of the Mississippi, from the River des Moines to the Falls of St. Anthony,—including a line of navigation, at least seven hundred miles in length, and which will subserve a region, whose area exceeds 100,000 square miles.

The Territory of Iowa includes all that portion of the United States, which lies north of the State of Missouri and between the Mississippi and Missouri Rivers. It was not organized as a separate government until last June. The settlements, which have been commenced, are chiefly between the Des Moines and Turkey Rivers, along the bank of the Mississippi; but the greatest population is in the region of the lead mines, and the town of Du Buque is the central point, of the commercial business of the territory.

The soil and climate have been represented as equal to any portions of Illinois or Wisconsin, and by many travelers pronounced superior to either. There has been a great accession of inhabitants within the last two years; but most of the industry, until very lately, has been directed to mining, as lead ore is very abundant throughout a considerable tract of country. The mines were discovered in 1780, by the wife of Peosta, a warrior of the Fox tribe of Indians, and the first smelting works were erected by Julien Du Buque, in 1788, who obtained permission of the Indians for that purpose; but dying in 1810, his house and whole establishment was destroyed, and every vestige of civilized life erased; and as late as 1820, Mr. Schoolcraft found great difficulty in obtaining permission to visit the mines, so jealous were the Indians of the whites, and so fearful that they would encroach upon their rights, if they should obtain a knowledge of the abundant mineral treasure which their lands contained. Since, however, the Indian title has been extinguished, by treaty, these prolific beds of ore have been extensively wrought, and the quantity of lead now obtained is enormous, for including that

produced in Wisconsin, it has amounted to over £30,000,000 in a single year.

The rapidly increasing population and commercial consequence of the Territory of Iowa may be estimated from the fact, that in the year 1837 the number of steam-boat arrivals and departures, at Du Buque alone, amounted to seven hundred and seventeen.

Besides lead, the Territories of Wisconsin and Iowa are rich in other useful minerals, which will either be found of great consequence to meet the demands of the inhabitants, or increase the variety and value of their products for exportation. There are numerous indications of mines of copper, zinc, iron, and bituminous coal; lime, sand, and free-stone are profusely scattered over the country. Cornelians and agates are found on the shores of the Mississippi and the other rivers.

As much the largest portion of the lead of these territories and Illinois is consumed in the northern Atlantic ports, for manufacturing purposes of various kinds, in naval and other architectural structures, paints, aqueducts, and the infinite other uses to which it is applied, the direction which it will ultimately take, for the great eastern maritime markets, when the canals and rail-roads shall have been completed from the Mississippi to Lake Michigan, will be through the ports on Niagara River; and the quantity required for New-England will vastly augment the transportation of the Great Western Rail-Road, from Boston to Albany.

Missouri is the central point,—the grand keystone of the Union. On the eastern side, it is laved by the broad, deep, and ever downward-rushing floods of the American Ganges, while it is traversed, in its whole western extent, by the mighty Missouri and its numerous tributary waters. Possessing a soil of unrivalled excellence, a diversity of climate and topographical features, as remarkable as they are propitious to all those branches of industry, which can be prosecuted in any of the middle states, with inexhaustible mines of lead and huge mountains of iron ore, of such eminent prolificness and superior quality, as no other portion of the globe presents, this state is destined to hold a most commanding position, for participating in the internal commerce of the nation, and St. Louis will certainly become one of the

largest emporiums,—the future magnificent Delhi of the Republic.

All the multifarious products of those far-spreading western regions, must take their various routes, through the infinitely numerous lines of intercommunication, which have been described, and finally be concentrated in the Golden Horn of the Niagara, and from thence be floated, in accumulated masses, down the Grand Highway of the Erie Canal, to the Hudson, or, ultimately, by the more northern route, of the ship canal, Lake Ontario, and the St. Lawrence, to Champlain and Quebec.

A careful examination of the report of the Canal Commissioners of the State of New-York, has been made, for the purpose of ascertaining, what portion of the articles, which are transported on the Erie Canal, were of such a character, as that they could be transferred to the rail-road, from Albany to Boston, and I found they amounted to 380,000 tons, being more than one-third of the whole; and that the value was about \$45,000,000, which is more than four-fifths of the total amount of the imports and exports of the West, that annually pass that channel.

More than half of the 1,171,296 tons, which made up the freights of the season, consisted of the products of the forest, and with those of quarries and mines amounted to 744,000 tons; but their aggregate value was only \$7,500,000. It will, therefore, be perceived, that Boston may participate, largely, in the commerce with the West, through the medium of the Western Rail-Road.

But there is another interesting aspect of this subject, which merits special consideration, from the direct bearing which it has, on the travel and transportation of the great thoroughfare, which Massachusetts has undertaken to open, to the Hudson. That river, as well as the Erie Canal, is closed, from about the 20th of November until the month of April,—a period of nearly five months, when the only intercourse, between the city of New-York, and that portion of the state, which extends north and west from Albany, is by common roads and rail-ways. It has been stated, that the line, of the last named mode of transportation, will be completed from Albany to Buffalo within two years; and when that from Boston to Albany shall be finished, a passage can be performed, with ease, from Buffalo to Boston, in thirty-six

hours ; and all the articles of export and import, of the whole intermediate country, capable of being transported on rail-roads, may be sent, to or from the latter city, during the long period the navigation of the Hudson and Erie Canal are obstructed by ice. It now requires from three to four days for passengers to reach the city of New-York, from Albany ; but, by the Western Rail-Road, they may leave the last named city at four o'clock in the morning, be in Boston in season to take the afternoon train of cars for Stonington, and reach New-York by seven o'clock the next day.

The facilities thus afforded, will command all the travel, during the winter, from that part of the state of New-York, Canada, Eastern Vermont and Massachusetts, which now concentrates at Albany, as the point of departure, for New-York.

While at Buffalo, I found that the travel, after the steam-boat and canal navigation had closed, from the Northern part of Ohio, Indiana, Illinois, the state of Michigan, Wisconsin, and even Iowa, by the stage routes to that city, and from thence to New-York, was very considerable,—all of which, in addition to that named, will pass through this State, as the most expeditious and pleasant mode of performing the journey.

Articles of merchandize, which are obtained in New-York, and destined for Albany, as well as the whole country north and west of that city, together with such products as it may be desirable to send from that vast region of country, may be transported by the Western, Boston and Providence, and Stonington Rail-Roads, and the excellent lines of steam-boats from the two latter ports, in nearly as short a period as by the Hudson river, when its navigation is open.

These are cheering inducements for the energetic prosecution of the works of internal improvement in Massachusetts. There is not only the certainty of an ample remuneration for the capital and labor expended, but there is the still more important consideration, that the interest of all branches of industry will be thus most pre-eminently advanced.

The thrifty and exalted position in which this State and its capital will be placed, by the completion of the Western Rail-Road, is no longer a subject of question or doubt ; and such will be the rapidly increasing amount of travel and transportation, that a sec-

ond track will be required in less than five years from the completion of the first ; and within ten after that shall have been laid down, it will be found that a CANAL must also be constructed, to accommodate that incalculable quantity of exports and imports of the thronging population of the ever extending bounds of the Far West, for which Boston will be the emporium. We shall only have reversed the course which New-York has pursued. There a canal was first formed ; but although it accommodated the transportation of merchandize and the products of the interior, it did not sufficiently subserve the demands of the hurried and impatient owners of the cargoes of those multitudinous boats which covered its surface, and the millions of other impetuous travelers, who thronged the same line of intercommunication. Speed, and certainty of reaching their several points of destination, were indispensable to satisfy their hasty and restless dispositions—that hurried and active movement which characterizes the American—and a rail-road is now being run, parallel to the route of the canal, for that purpose ; and scarcely had portions of it been opened to the meteor flight of the steam-driven cars, before it was discovered that each of these modes of conveyance were the cause, as well as the effect, of the increased and increasing amount of travel and transportation which they severally accommodated, and that the canal was not sufficiently large to answer the grand objects of its construction, and the labor has therefore been commenced for more than quadrupling its capacity.

The data for ascertaining with considerable accuracy the population of the United States at any not very distant future period, having been furnished by the several enumerations of the people, in decadal terms of years, it may be assumed, that in twenty-five from this time, the census will amount to at least 30,000,000, and that nearly one half the number will be contained within the states and territories which participate in the navigation of the Erie Canal. At that time Boston will have a population of more than 200,000 ; and at the next duplication, which will be within half a century, it will be augmented to 500,000, and that of the Union to 60,000,000. Many of those who are now just commencing the career of life, will be actively engaged in transacting the vastly increased business of the country, at the expiration of the first term which has been named, while the children, who at this mo-

ment are crowding our primary schools, will, like us, at the termination of the second, be looking forward to still more wonderful results, and many of them will witness the realization, before they sleep with the generations that have preceded them. They will be extending their more ample views beyond the Rocky Mountains, and contemplating new lines of intercourse between the Pacific and the densely populated valley of the Mississippi, on which will be borne the rich products of Asia and the Oriental Isles.

Your friend and servant,

H. A. S. DEARBORN.

LETTER NO. X.

HAWTHORN COTTAGE, ROXBURY, JAN. 15, 1839.

To the Secretary of the State of Massachusetts :

DEAR SIR,—One more short letter, and I shall have concluded a correspondence which I fear has already been extended too far. In a conversation with Col. Beach of Gloucester, a few days since, in relation to the importance of speedily completing the Great Western Rail-Road, he communicated the following interesting facts.

Before the construction of the Providence and Stonington Rail-Roads, the whole number of halibut annually caught, and brought into Cape Ann, did not exceed 2500, which were nearly all sold fresh, for immediate consumption ; for not having been in demand, when cured in any manner by salt, for the domestic or foreign markets, but few were prepared for that purpose ; in fact, so worthless were they considered, as salted fish, that the owners of vessels employed in the fisheries, generally instructed the crews to cut adrift all the halibut which were drawn up, and, every year, many thousand had been thus turned back to the deep, with a fatal wound. But such was now the facility of transporting them *fresh*, to the New-York market, at least 16,000 were taken, and a large portion of them sent to that city, by the rail-roads and steam-boats. The average weight of each being fifty pounds, the whole quantity amounts to 800,000 pounds, and as the common price paid to the fishermen, is two cents per pound, this new source of revenue yields an income of \$16,000.

Formerly the halibut was only caught late in the spring, and during the summer and autumnal months, on the South Shoals

of Nantucket, along the coast of Cape Cod, in Barnstable Bay, on Cashe's Ledge, and some other places, where they were most abundant, at certain seasons of the year, and always in deep water, being considered, as it is termed, a *bottom* fish; but since the demand for this American Turbot, as it may with propriety be called, (for it much resembles that delicious fish, in form and flavor,) has so vastly increased, the fishermen have made explorations in search of other haunts, and, to their great astonishment, found them in immense quantities on George's Banks, early in March, and what was still more surprising, and a fact entirely unknown to them, they appeared in extensive shoals, on the surface of the water, like mackerel, and were taken with but three or four fathoms of line, instead of from twenty to seventy, which they had been accustomed to use, time out of mind, in the *bottom* fishing. The Cape Ann vessels take from 200 to 500 each trip, weighing from twenty to one hundred pounds.

Besides this novel and important branch of the fisheries of our coast, that of cod and haddock has been so much extended, to supply the New-York market, during the winter, cold spring and autumn months, that over 100 boats are constantly employed, and from 4,000 to 6,000 pounds are daily sent to Boston, and from thence, by the rail-roads and steam-boats.

These fish were heretofore sold, by the fishermen, for sixty-six cents per hundred pounds, and now they average \$1 33. This additional demand, amounts to at least \$8,000 for about six months, which, with that obtained from the halibut, gives an increase to the fishermen of the peninsula of Cape Ann alone, of \$24,000. But the moral influence is still more important, for the winter has ever been a period of leisure, to the largest portion of that hardy and adventurous class of our fellow-citizens, and too much of it was spent in a manner, which, while it exhausted their funds, that had been so laboriously earned, induced habits of dissipation, which were productive of most deleterious, if not ruinous consequences to themselves and families.

Immense numbers of fresh fish are also sent, during the winter, into the interior of New-England, New-York and the Canada; and when the Western Rail-Roads shall have been completed to Lake Erie, the demand for the supply of the numerous and fast increasing population on that long route, of over 500

miles, will be enormous, as there is not a man, woman or child, who has bathed in the cool green waters, or inhaled the refreshing breeze, redolent of the ocean-shores of New-England, and has removed into the far-off West,—and their name is legion,—that will not rejoice at the sight of a car-load of *salt water fish*; for they recollect them, with as deep an interest, as did the Israelites those of Egypt, during their long wandering in the wilderness.

There are 198 vessels, 100 boats, and 1116 men engaged in the fisheries of the district of Gloucester, and the value of the salted and fresh fish, annually taken, is estimated at \$440,340.

In addition to the facts obtained from Col. Beach, it may be interesting to state, that even the boys of your city, are employed, as well as a great number of men, in taking smelts in the harbor, Charles River, and the basin of the Western Avenue, which are daily sent off, by the rail-roads, for the tables of the whilom juvenile Yankee disciples of old Isaac Walton, who now reside in New-York—thus showing that there is no employment, however humble, or any branch of industry, however trifling, which is not directly benefited by internal improvements. But the whole extent of the fisheries, in all the various branches, from the “*catching*” of a smelt, at the ends of the wharves, to the “*killing*” of a whale in the Pacific Ocean, has been wonderfully encouraged and increased, from the facilities, which have been given to transportation, by the navigation of the Mississippi and all the western rivers and lakes, as well as the bays and waters of the Atlantic States by steam-boats, and the construction of canals and rail-roads, over the whole country.

At the close of the war, in 1815, the fishermen were almost in despair; for the general peace of Europe had given freedom to the navigation of all nations, and the competition which would thus be produced with the bounties offered by France and England to their own vessels, and the monopoly secured by the latter to its American colonies in the West-India supply, seemed to threaten an extinction of their vocation; but this apprehension was of short duration; the demand for the supply of the ports on our own coast, and the whole West, soon gave a new stimulus to their enterprise, and ultimately more than replaced the loss of the markets of Europe. From the vast number of quintals of

dried fish and barrels of mackerel which have been annually shipped to Albany, to be sent up the Erie Canal, that city is now called New Bilboa* by our fishermen; and with Philadelphia, Baltimore and New-Orleans, afford better markets than all the West-India Islands, France, Spain, Portugal, and the Mediterranean.

In 1804, the value of dried and pickled fish exported from the United States, was \$3,040,000, but in 1822 only about \$900,000, and has averaged since not over \$1,000,000, while the domestic demand has so much increased that the quantity consumed of salt and fresh is over \$5,000,000.

The tonnage, engaged in the fisheries in 1822, was less than 80,000, and now it is nearly double that amount, and in which the hundreds of boats that have been added are not included.

By the very interesting and highly valuable statistical report which you made to the Legislature last February, it appears,—

That there were employed in Massachusetts, in the Cod and Mackerel Fisheries, 1,290 sail of vessels, which required 11,146 hands, and that the quantity of fish taken was valued at \$3,208,559.

In the Whale Fishery there were 366 vessels, whose aggregate tonnage was 113,417, and they were navigated by 8,980 men. The oil imported was valued at \$4,271,470.

Thus the Fisheries of this State give employment to 1650 sail of vessels, besides many hundreds of boats, and 20,126 men and boys; and the annual value of the products of this extensive and important branch of industry amounts to \$7,480,029, which is equal to the income from a capital of more than \$124,000,000. And all this is drawn from the inexhaustible treasures of the deep, which will be annually and forever augmented in proportion to the extension of the improved lines of intercommunication, which are being and will continue to be multiplied, with the increase of population, and that of every kind of industry.

Still, this lucrative branch of maritime enterprise constitutes but a comparatively small portion of the productive industry of our State, which, exclusive of agriculture, the coasting trade, and foreign commerce, amounts to more than \$86,000,000, a large

* That Spanish port was formerly one of the greatest markets for our fish.

part of which is in manufactured articles, that are sent to every section of the Union.

These facts exhibit, in a most conclusive manner, the deep interest which Massachusetts has, in the establishment of lines of internal improvement, throughout every portion of its territory, and into the most distant regions of the republic.

Your friend and servant,

H. A. S. DEARBORN.

ERRATA

In Letter No. I, instead of "15,000 acres," read "15,000 acres," as the contents of Grand Island.

At the end of Letter No. V, for "emporeum," read "empyreum."